

XVIII.—*Further Notes on the Birds of Southern Cameroon.*—
Part I. By G. L. BATES, M.B.O.U. *With Descriptions*
of the Eggs by W. R. OGILVIE-GRANT, M.B.O.U.

(Plates VII.—IX. and Text-figs. 13 & 14.)

THE collection on which these notes are based was made from August 1908 to December 1910, mostly at my place of residence at Bitye, near the western bend of the River Ja (see map, 'Ibis,' 1908, p. 558). But a number of specimens were obtained on two trips further east. One trip—to mention the shorter one first—was made in January 1910 to a place perhaps seventy-five miles down the Ja from Bitye, called Esamesa. Though only a few days were spent on this expedition, two birds that I had not collected elsewhere were obtained, one being *Apalis jacksoni*, hitherto known only in the Lakes-district of Africa. The longer trip occupied part of November and all of December 1908 and part of January 1909. The part of this time not spent on the road was passed at a camp near Assobam, in the Njiem or Zima Country, a place a little to the north of Bizam which is marked on the map referred to. My camp was in a bit of the forest between the village and the small River Bumba, the principal tributary of the Ja.

The number of species of which specimens were collected at Assobam was about a hundred and twenty, and a few more were shot or were plainly seen so as to be known. These include some forms of wide range in Africa, and many West Coast species that had already been found by Emin and others in Central Africa, or later by the Ruwenzori Expedition or by Mr. Douglas Carruthers on the Upper Congo. But they include also forty-one species hitherto known, so far as I can learn, only from the West Coast, the range of which is thus extended 150 miles further into the interior of Africa than before, for Assobam is about that distance east

of Bitye. These strictly West Coast species obtained at Assobam are as follows:—

Haplopelia plumescens.	Malimbus rubricollis.
Calopelia puella.	Ploceus preussi.
Guttera plumifera.	„ cucullatus.
Francolinus squamatus.	Estrilda atricapilla.
„ lathamii.	Criniger chloronotus.
Astur toussenellii.	Bleda notata.
Lophotrix letti.	Phyllostrophus simplex.
Turacus persa.	Andropadus serinus.
Indicator conirostris.	Pycnonotus gabonensis.
Verreauxia africana.	Anthreptes fraseri.
Dendromus nivosus.	Parmoptila woodhousei.
Lophoceros hartlaubi.	Euprinodes rufogularis.
Ortholophus albocristatus.	Macrosphenus concolor.
Fraseria ocreata.	Camaroptera chloronota.
„ cinerascens.	„ superciliaris.
Diaphorophya chalybea.	Neocossyphus poensis.
Erythrocerus maccallii.	Turdus saturatus.
Trochocercus nitens.	Alethe castanea.
Tchitreia rufo-cinerea.	„ poliocephala.
Chaunonotus sabinii.	Callene cyornithopsis.
Malaconotus gabonensis.	

The new species discovered on this trip were *Lobotus oriolinus* and *Pedilorhynchus brevirostris*.

The birds mentioned in the following notes consist (1) of species not hitherto reported in the papers by Dr. Sharpe on my collections or in my own notes; these number forty-one (in Parts I. and II. together), and six of them were new; they may be known by the absence of references to 'The Ibis': (2) of species already reported, about which there seemed to be further facts worth noting. The character of the notes here given is very varied, and the term "Field-notes" is not applicable to all of them. Whether the observations in the field will be found disappointing or not I cannot say.

All my work has been done with constant help from the natives; but I have used the greatest caution in trusting to

the statements of the natives. All my birds were sexed by myself alone. In speaking of objects and conditions peculiar to the African forest country, it has often been difficult to find suitable English words, and it has been convenient to borrow a few words here from Bulu, my language when in Africa; they have mostly been used in 'The Ibis' before. (Pronounce the vowels as in French.) *Ejak* means a company of birds in the forest (see 'Ibis,' 1905, p. 462); *ékótók*, plural *bikótók*, means old cultivated or cleared land, now abandoned and overgrown thickly with almost impenetrable bushes, vines, tall sedges and grass, and small trees; *éngas* means the swampy border of a stream, overgrown with sedges and weeds; *njak* is the name of an ants' nest hanging in a tree, and also of a suspended termites' (white ants') nest. Names of trees and plants used are:—"aseng," *Musanga smilhi*; "abôe," *Alcorneacordata*; "atôndôk," *Haronga* sp.; "ôkông," *Triumfetta* sp.; "ésông," *Panicum maximum*.

Much more is due to Mr. Ogilvie-Grant in this paper than his brief descriptions of the eggs, and I am under great obligations to him. I must also thank the officers and attendants of the "Bird-room" in the Museum for much courteous help.

The arrangement followed is mostly that of Prof. Reichenow's "Vögel Afrikas."

PLOTUS RUFUS. [Ntotôko.]

Anhinga rufa Reichenow, V. A. i. p. 95.

No. 4322. ♂ (testes large). Bitye, July 1910.

This specimen is the only one that I have seen, and it was new to the boy who shot it and to the people of the village. But a man from another village nearer the Ja knew the bird and gave me the Bulu name for it; so probably it is not very rare on the Ja itself. The boy who shot my specimen said that he saw it on a log over the small river near Bitye, with its wings spread out, sunning itself. When shot and wounded it dived into the river out of sight and emerged far away.

PTERONETTA HARTLAUBI. [Alot.]

Bates, Ibis, 1909, p. 6.

Male specimens (Nos. 3661 & 4143) from Cameroon have a *small* white spot on the forehead at the base of the bill, but have not nearly so much white as the birds which Neumann has called *P. h. albifrons* (Bull. B. O. C. xxi. p. 42). All my female examples (Nos. 29, 33, 4142, and 4459) have either no white or a very faint "ticking" of white on the forehead. This white spot is a sexual marking of the male, which is beginning to be acquired by fully adult or old females; it is more developed in birds from the Upper Congo region than in those from the West Coast.

The young, which are marked with four light spots on the back, are caught on or near streams rather frequently. Last November (wet season) a man found a female with nine ducklings on land near his line of dead-fall traps, which were connected by a fence and placed near a stream for catching small animals. He drove the birds along the fence till the mother entered one of the traps and was caught; he also caught five of the young ones and brought them to me. The mother is the skin marked No. 4459. I kept the ducklings alive for several weeks in a little pen of wire netting. They ate cassava and maize meal put in water, and also greedily picked up termites placed on the floor of their pen. The most remarkable thing in their actions was the power of climbing they shewed on the first day. When put into an old keg they soon climbed out, clinging by means of their sharp claws to the rough wood. When I put them into a wire pen they did the same, and it had to be covered over. The first jump from the ground landed the duckling several inches up the wire netting, where it clung with its claws; then another jumping effort, with one foot clinging fast, brought its other foot far above the first station; and so it worked its way to the top. The disposition, and perhaps the power, to climb ceased after a day or two; it seemed to be a special endowment enabling these young ducklings, when hatched in a hollow tree, to reach the opening and escape. [See the account of the young of the Summer-Duck (*Æx sponsa*), J. f. O. 1910, p. 101.]

GLAREOLA MELANOPTERA.

Bates, Ibis, 1909, p. 9.

No. 3919. ♂. No. 4413. ♂. In immature plumage, which is worn and old. These birds were killed at Bitye in September 1909 and 1910; the specimens already recorded ('Ibis,' *l. c.*) were also killed in September, and other birds of this species were seen in that month, in different years.

TOTANUS OCHROPUS. [Amalaka.]

No. 3186. ♀. Assobam, Dec. 1908.

An example of *Totanus hypoleucus* was also killed, at the same place and time; the latter was moulting.

HIMANTORNIS HÆMATOPUS. [Nkulengu.]

Sharpe, Ibis, 1907, p. 421.

No. 4401 was killed in a dead-fall trap placed in the forest, near a stream, for catching small animals.

The wings of this bird were examined when it was freshly killed, and found to be *eutaxic*. Mr. Pycraft has kindly examined another specimen, a dried skin, and found the wing *eutaxic*. In his article on "The so-called 'Aquincubitalism' in the Bird's Wing" (J. Linn. Soc. xxvii.) the "Ralli" are placed in the list of "large groups every individual member of which, so far as is known, has diastatic wings" (p. 247).

GALLINULA ANGULATA.

Reichenow, V. A. i. p. 295.

No. 3747. ♀ imm. Bitye, R. Ja, June 1909. Iris yellowish brown; bill dull yellow, blackish on culmen.

This specimen resembles a somewhat younger bird in the British Museum collection, which has the black down still attached to the tips of some of its feathers. Neither of these examples resembles the type of Selater's *Gallinula pumila* and a number of specimens like it; these seem to be adult females, and not young birds, as Reichenow states *G. pumila* to have been. All have the under side light grey, and the long feathers about the vent, lying among the white under tail-coverts, black, as in the adult male. The young birds

have no black vent-feathers, and the underparts are white.

No. 3747 was brought in alive, having been caught in a clearing near a stream.

PODICA JACOBI.

Reichenow, J. f. O. 1906, p. 325; Bates, Ibis, 1909, p. 8.

No. 4179. ♀ (small ova in ovary). Bitye, April 1910.

This specimen has the wing 150 mm. long, the tail 120 mm., the bill 38 mm. Thus it agrees in size with the description of *P. jacobi*. The specimens sent in previous years (cf. 'Ibis,' l. c.), even the females, were much larger, though still much smaller than examples of *P. senegalensis*. As I can see no other difference except that of size between the present specimens and those previously sent, I conclude that they are all referable to *P. jacobi*, and that the species has a wide range of variation in size. It may be that these birds continue to grow after they reach maturity, a conjecture supported by the fact that the two largest female birds have black heads. As in *P. senegalensis*, this character is the mark of the fully adult bird; but in the Senegal form it is accompanied by the characteristic grey throat and white line on each side; in *P. jacobi* the whole throat is always white, even in the old black-headed birds. All female specimens, even the oldest, have the white plumage of the breast mottled with dark brown.

The present example (No. 4179) was brought to me alive by a woman who had found it caught in a basket-trap placed in a stream to catch fish. When held in the hand it trembled and uttered a low guttural growl ending in a faint squawk.

THERISTICUS RARUS.

Reichenow, V. A. iii. p. 804; Sharpe, Ibis, 1907, p. 423.

No. 3103. ♀ ad. Length of bill to hinder angle of nostril 112 mm.

No. 4271. ♀ juv. Length of bill to hinder angle of nostril 68 mm.

Both were shot at Bitye, R. Ja.

There is no doubt about the distinctness of this species

from *T. olivaceus*, an example of which I procured at Efulen some years ago (*cf.* 'Ibis,' 1904, p. 96).

The immature specimen (No. 4271) shews no marked difference in plumage from the adult; the difference in the length of the bill is, however, remarkable, and so is the difference in the colouring of the naked skin of the head; in the young bird this is uniform dark purplish blue, while in the adult it is black with some light blue spots.

I was informed that the young bird (No. 4271) was one of two individuals which were seen standing on the bank of a stream, and thrusting their bills into the water. No. 1177 ('Ibis,' 1907, p. 423) was likewise said to have been one of a pair seen to fly up into a tree from the bank of the same stream. The stomachs of all contained some worm-like creatures, or bits of shell and perhaps insects, along with a quantity of mud and decaying leaves; and even the intestine of one seemed to be full of mud.

ABDIMIA ABDIMII.

Reichenow, V. A. i. p. 343.

No. 4170. ♀. Bitye, R. Ja, April 18, 1910.

This is the only specimen I have ever met with in Cameroon, and the natives with whom I talked had never seen one. It appeared at the end of the longer dry season, the rains of April were late in beginning last year. That is the period of greatest drought all over Africa north of the equatorial forest-belt, and the Stork had evidently been driven by lack of food to wander so far. Its stomach was full of grasshoppers. It settled in a large clearing that had recently been burned off; and when disturbed did not fly to the surrounding forest, but remained on the cleared land.

NYCTICORAX LEUCONOTUS.

Reichenow, V. A. i. p. 363.

No. 2977. ♂ adult. Stomach full of small crustaceans.

No. 4042. ♂ imm.

Both specimens were obtained at Bitye, the first having been shot, the second caught by the leg in a noose that had

been set for ducks, over or in the water. According to the account it must have come into the snare not at night, but about 8 or 9 o'clock in the morning. When alive, and for an hour or two after death, there was a bluish tint or "bloom" on the plumage of the head, which disappeared later. The same peculiarity has been noted in the plumage of other Herons and in a species of Dove.

VINAGO CALVA. [Obeng.]

Sharpe, Ibis, 1907, p. 419.

Nos. 3867, 4390, and 4487 were young birds just able to fly, that were caught and brought in to me, as were also some other individuals like them. They have the head "sap-green" and the feathers of the other upper parts grey with "sap-green" edges.

No. 4389, ♀ adult, had sixteen rectrices; a number of others examined, of both sexes, had fourteen. The wing in this species is diastataxic.

I have records of eight Obeng's nests taken or seen, in every case with one egg only. Three eggs that were preserved measure 32×25 , 29×23 , and 28×22 mm.

In connection with one of the nests there was a curious circumstance worth recording. This nest was placed in a small *atóndók* tree at the edge of my clearing. In the morning I saw an Obeng fly off, leaving its one egg lying as if lodged on a few chance dry sticks—the only nest this Pigeon makes. About two hours later I approached the place again, and heard the whistling noise made by the bird's wings in flying off. The little nest was there, but no egg. I searched carefully on the ground and among the bushes under the nest, but, as I found no traces of the egg, can only suppose it was carried off by the bird on being disturbed a second time in one morning.

As to the way in which the egg had been transported, I may add that the bird hardly had time to take the egg in its mouth before it flew. When the Obeng sits, the egg is kept between the feathered feet. It would be possible, I should think, for the bird to carry the egg thus between its feet,

without any change of position, when it flew away. It might then easily alight elsewhere on any chance platform of two or three dead twigs sufficient to support the egg, and by a few minutes' work make as good a nest as the one had left.

COLUMBA UNICINCTA. [Afep.]

Sharpe, Ibis, 1904, p. 94 ; 1907, p. 419.

No. 3309. ♂ (testes large). Assobam, Bumba R., Dec. 1908. Iris and skin around eye red ; feet pale bluish-grey ; bill pale leaden-blue. Shot on a high limb of a tree over my camp. There were two sitting side by side, almost touching one another, and a sound was heard to come from one of them resembling the distant "booming" of the Prairie-cock. This sound has often been heard in the forest when the bird could not be found, being effectually hidden in the top branches of the trees. These large Pigeons are difficult to kill, and many a shot has been wasted on them.

TURTUR SEMITORQUATUS. [Zum.]

Bates, Ibis, 1909, p. 9.

Streptopelia semitorquata Sharpe, Ibis, 1904, p. 596 ; 1907, p. 419.

Two specimens examined had the rectrices twelve in number and the wings diastataxic.

Two more nests, each with two eggs and a third with two nestlings, have been found—the single egg mentioned in my previous paper ('Ibis,' *l. c.*) must have been an exceptional case. The eggs vary from 29 to 32 mm. in length and from 23 to 24.5 mm. in width.

TURTURÆNA IRIDITORQUES.

Sharpe, Ibis, 1904, p. 94.

No. 4334. ♂ ad. Nos. 3792, 4292, 4328. ♀ ad. Bitye, R. Ja.

The females differ in plumage considerably from the male, in the manner indicated in Reichenow's descriptions. My male specimen has one marked peculiarity, in that it has the two central rectrices broadly tipped with yellowish-

white, like the others, while a specimen from Sierra Leone, agreeing with Reichenow's description and also with Cassin's original description, has these rectrices uniform slaty-grey. The three females, though all adult, differ in the amount of grey on the forehead; this looks as though there is a tendency to attain the colouring of the male with advancing age.

All my specimens are breeding birds. One was from a pair that had a nest in a small *atóndók* tree in the *ékótók*, which was, however, as yet without eggs. The call-notes of this Dove are entirely unlike those of any other species that I have heard in Africa. They strongly reminded me of the notes of the "Mourning Dove" of my boyhood in Illinois, which I suppose was *Zenaidura carolinensis*. They are a series of mournful notes, which begin with some energy and die away.

HAPLOPELIA PLUMBESCENS.

Sharpe, Ibis, 1904, p. 95 (January); Grant, Trans. Zool. Soc. xix. p. 448 (1910).

Haplopetia seimundi Sharpe, Bull. B. O. C. xiv. p. 93 (June, 1904).

? *Aplopetia tessmanni* Reichenow, Orn. Monatsb. 1909, p. 87.

No. 3366. ♂ imm. Assobam, R. Bumba, Jan. 1909.

Nos. 2774 and 4359. ♂ ad. Bitye, R. Ja.

No. 4446. ♀ breeding. Bitye, R. Ja, Oct. 1910.

Iris grey; feet and margin of eyelids red; bill and cere black. Rectrices twelve in number; wing diastataxic.

The adult males are exactly like the type of *H. seimundi*, and agree also with the description of *H. tessmanni*, from a locality near where mine were collected. The immature male, a browner bird with light feather edges, is like the type of *H. plumescens*, which I got at Efulen. The adult female is quite different from any of the males, being olive-brown on the back and rusty umber-brown on the breast.

This Dove seems always to be found near a stream of

water. No. 4446 was caught in a dead-fall trap set near a stream in the forest, as described under *Pteronetta hartlaubi*.

No. 4359, a breeding male, was shot by Nkolo "on its nest," about 3 o'clock in the afternoon, in a bit of forest near a stream between two villages. The nest, which was brought to me with a single egg, was more of a structure than Doves usually make. The base was composed of sticks, some as large as a pencil, and on top were tendrils. The egg is cream-coloured, glossy, and measures 27×22 mm.

CALOPELIA PUELLA. [Odu.]

Sharpe, Ibis, 1904, p. 94.

Calopelia brehmeri Sharpe, Ibis, 1904, pp. 95, 596; 1907, p. 420.

I cannot account for the difference in colour between the metallic wing-spots of different individuals. It does not seem due to age or sex, neither does it seem to indicate that the birds belong to two different species.

This species has twelve rectrices, and the wing is eutaxic.

Though many specimens of this Dove have been killed—mostly caught in snares in the forest—and I have sometimes seen it alive, generally on the ground, it is only lately that I have witnessed it uttering its call-notes, so as to know certainly what sound it makes. The notes I saw and heard it uttering were not distinguishable from those of a *Tympanistria*, and differed from those of *Chalcopelia afra* (see below) only in being stronger and fuller in tone. These three Doves have the same name in Bulu, doubtless because their call-notes are so nearly alike. The name "Odu" is not imitative, but rather derived from the word "du," which means "crying" or "mourning."

The only nest that I have seen was brought to me along with the female (No. 4499) and two nestlings. This nest consisted of a bed of decaying stems and leaves, with some rootlets on the top, and was not so scanty as the nests of most other Doves. It was found on the horizontal limb of a tree, near the ground, in the forest.

TYMPANISTRIA TYMPANISTRIA. [Odu.]

Sharpe, Ibis, 1904, p. 94; 1905, p. 464; 1907, p. 420.

In this species the rectrices number twelve, and the wing is eutaxic.

This Odu has a call very like that of *Chalcopelia afra*, but uttered in a stronger and more resonant tone. Though the bird is not so often seen as the other species, nests of *Tympanistria* have occasionally been found, while those of *C. afra* have not yet been discovered. One nest I found myself, with the bird on, in some thick tangled bushes at the border of a clearing, just at the height of my head from the ground. It contained one egg, already slightly cracked by the young bird within. After visiting the nest several times, one day I found the nestling with its plumage half-grown, and intended to secure it as a specimen; but when I approached it flew away! A comparison of dates shewed that this squab was able to fly when twelve or thirteen days old.

Nos. 3114 and 3115 are a pair of nestlings taken by a boy from a nest. The outermost primaries already shew the narrowed tips. The feathers of the upper parts of the body, with down still adhering to their tips, are chocolate-brown with light reddish-brown bars; the feathers of the under parts are white or whitish, those of the breast with dark bars.

On two other nests the sitting birds were shot by my boy, who, by aiming at the head, succeeded in killing the birds without breaking the eggs. These nests were very slight, composed of small sticks or rootlets and tendrils. One of the birds (No. 4386) was a female, killed about five o'clock in the afternoon. She had two eggs, measuring 23×17 mm. (both the same). The other (No. 4513) was a male, shot on the nest in the forenoon: one egg was broken, the other measured 24×18 mm. All three eggs are perfect ovals with but little gloss, and of a deep cream-colour.

CHALCOPELIA AFRA. [Odu.]

Sharpe, Ibis, 1904, p. 94; 1907, p. 420.

No. 4131 is a specimen of a young Dove, looking almost

exactly like the young of *Tympanistria tympanistria* (Nos. 3114 and 3115) mentioned above, but the outermost primary is not narrowed; it is of a lighter brown above, and has less white beneath, so I think it belongs to this species.

This is the commonest Odu and one of the most fearless of birds, coming boldly about villages and on paths to pick up its food, its dull coloration making it often unnoticed as it walks on the ground or perches on a decaying log or stick. Its call consists of a succession of notes uttered in a very low and feeble tone, begun in a slow and halting manner and afterwards more rapid, as if the poor bird was at first choked with grief, but became more cheerful as it went on. This sound seems to come from far away, though the bird may be sitting, unnoticed, on a twig or log only a few yards off. While in the act of uttering its notes, it keeps its bill pointed downwards and held near its crop.

In this species the rectrices are twelve in number and the wing is eutaxic.

GUTTERA PLUMIFERA. [Mvem.]

Sharpe, Ibis, 1904, p. 94; 1907, p. 418.

Nos. 4462, 4465-6, & 4479, chicks. Bitye, R. Ja, Nov. 1910.

These chicks have two parallel white stripes running down the sides of the back; between the stripes the down is black; on the sides of the body outside the stripes it is brown. The head has a complicated but symmetrical pattern of light yellowish-brown and black stripes. These stripes on the head shew very plainly on the inside of the skin when it is turned back; and especially the black stripe running back from the forehead, where the crest of the adult would be, is seen to be composed of dense down-feathers different from the rest. Small yellow lappets of skin hang from the gape on either side.

These chicks were kept alive along with some ducklings (see above) for a few days, but died one by one. Their most interesting characteristic was the way in which the feeding instinct was excited by imitation. The ducklings paid no

attention to each other when feeding; but whenever one Guinea-chick pecked at anything the others would run to join it. If one had anything large in its bill, another would seize it and try to pull it away. They would peck at small objects when moving, though indifferent to them when lying still. One would often seize with its bill the wing-tip or toe of a duckling. Their natural food probably consisted of worms or millipedes and such like.

Last August my hunter, Nkolo, shot a Guinea-hen, which on dissection shewed that she had recently laid several eggs. She was sitting on nine eggs, on dry leaves on the ground in the forest; five of the eggs were broken by the shot, but he brought the other four. The eggs are white, but much stained, and the numerous pits in the shell are dark as if from dirt. They are pointed at one end and very blunt at the other. They vary in length from 47·5 to 49 mm., and in width from 37 to 38·5 mm.

POLYBOROIDES TYPICUS.

Ibis, 1904, pp. 98, 596.

This peculiar Bird of Prey lacks the adroitness of movement of the more typical Falconidæ; it mainly seeks food that is not difficult to secure. It continually visits the palm-trees about villages, and seems to have two objects in view: one is to eat palm-nuts, the other to look for nestling Weaver-birds. One individual used to visit the palm-trees near my house on Sunday afternoons, when there were no people about. In a tree that was full of the nests of *Ploceus cucullatus* and *P. nigerrimus*, the Hawk was seen to go from nest to nest, tearing them open with its bill; but it did not find any young birds while I watched it. It was in plain sight, and seemed perfectly aware of its exposed position, for it never made a motion without afterwards raising its head and looking all around, with its crest erected, which gives it a peculiarly fierce appearance. Once, while its head was so raised, it was struck about the eyes by a Weaver-bird; but except when it disturbed a nest, the small birds paid no more attention to it than they would have done to a Hornbill.

When exploring a palm-tree, a *Polyboroides* walks along the branches a great deal, flying only where the frond becomes too slender to support its weight.

ASTUR CASTANILIUS.

Sharpe, *Ibis*, 1904, pp. 99, 597; 1907, p. 425.

No. 2060. ♂ ad. Bitye, R. Ja, Nov. 1906. Length of wing 155 mm.

No. 4435. ♂ ad. Bitye, R. Ja, Oct. 1910. Iris dark red; feet and cere yellow; bill and claws black (one claw white). Length of wing 155 mm.; tail 140 mm.

These specimens are just like the type in the British Museum (Verreaux Coll.), except that the back of No. 4435 is of a lighter grey colour (that of the type is blackish) and the under tail-coverts are entirely white. In size they agree exactly with the type and with other male specimens I have procured. In the females the length of the wing is 180 to 185 mm. This has already been pointed out by Dr. Sharpe ('*Ibis*,' 1904, p. 100), but it seems worth while to mention it again, because the range of measurements given by Reichenow appears to be incorrect.

No. 2060 was caught in a snare in the following manner:—A small bird that had been snared on an *atóndók*-tree had been partly eaten by the Hawk when found by the boys who were snaring birds. The boys left the small bird hanging and fixed a noose to catch the Hawk when it returned to complete its meal.

ASTUR TOUSSENELII.

Sharpe, *Ibis*, 1904, pp. 100, 597; 1907, p. 425.

No. 4299, ♀ ad. Bitye, R. Ja, July 1910. Iris orange; feet yellow; cere and skin about eye yellow to orange; bill black, grey at base. Length of wing 225 mm.

No. 3268, ♂ imm. Assobam, Bumba R., Dec. 1908. Iris light yellow; bill black, bluish at base; cere, skin around the eye, and feet pale yellow; claws black. Length of wing 193 mm.

The length of wing in the type specimen (Verreaux Coll.) is 198 mm.

My adult specimen is a lighter-coloured bird than any in the British Museum, both above and beneath, and has only a very few faint bars on some of the breast-feathers: doubtless it is an old bird. The difference between this species and *A. castanilius*, both in size and in colouring, is very marked. *A. toussenelii* is a lighter grey bird, when adult, than the other, besides differing conspicuously in the colouring of the under parts.

No. 4299 was said by Nkolo, who shot it, to have been watching the little birds which had gathered to feed about an army of driver-ants. As its crop contained a recently eaten frog, it is probable that its object was not so much to catch little birds as to secure the frogs that the drivers routed out of their hiding-places.

No. 3268 had an old palm-stalk arrow, or part of one, sticking in its forehead near the left eye, so that when the boy who shot it saw it on the perch it looked as if it had a horn. The eye, which had been pierced by the arrow, had shrivelled up, and the wound had healed. The bird was somewhat fat, even though it had long been wounded and carried an arrow in its head.

BAZA CUCULOIDES.

Reichenow, V. A. i. p. 618.

No. 2235. ♂ ad. Bitye, R. Ja, Feb. 1907. Stomach full of grasshoppers, beetles, white grubs, &c. Shot in the forest.

No. 3624. ♀ imm. Bitye, R. Ja, April 1909. Stomach contained sixteen undigested grasshoppers. Iris, feet, and cere yellow; bill and claws black.

FALCO SUBBUTEO.

Reichenow, V. A. i. p. 628.

No. 3134. ♀ imm. Bitye, R. Ja, Oct. 19, 1908.

This example, the only one that I have seen, had the plumage much worn, with the exception of two wing-quills on one side and one on the other, which looked new. It was brought in alive and unhurt by a man who said that he



H. Grönvold del.

GLAUCIDIUM PYRCRAFTI ♂.

West, Newman imp.

caught it with his hands, as it was trying to fly off with a fowl that was too heavy for it.

LOPHOSTRIX LETTI.

Reichenow, V. A. i. p. 663.

Scops letti Sharpe, Ibis, 1904, pp. 104, 604; 1907, p. 427.

No. 3291. ♂ ad. Assobam, Dec. 1908.

No. 3292. ♀ young. „ „

These two examples were killed at one shot; there were three sitting on a limb together. The old bird had in its stomach the hard parts of brightly-coloured beetles.

Not only is the colour of the plumage of the young one very different from that of the adult, being of a pale rust-colour with white edges to the feathers, and about the face entirely white; but the colour of the iris is bright yellow, while in the adult it is brownish-yellow. The white face and yellow eyes would help to make the young Owl visible in the darkness of a hollow tree.

The plumage of this young Owl is remarkable on account of its structure as well as its colour. It is a "mesoptyle" plumage, the feathers being somewhat downy, yet having shafts, and bearing on their tips many of the first down-feathers, as in the illustration of "mesoptyle feather of Tawny Owl" in Pycraft's 'History of Birds,' p. 270. Mr. Pycraft has pointed out to me a further peculiarity, in that the rectrices, which belong to the "teleoptyle," or final plumage, bear, each on its tip, a *mesoptyle* tail-feather.

GLAUCIDIUM PYCRAFTI. (Plate VII.)

Glaucidium pycrafti Bates, Bull. B. O. C. vol. xxvii. p. 85.

No. 4153. ♂. Bitye, R. Ja, March 26, 1910.

Adult male. Head dark greyish-brown; back and upper surface of the wings dark umber-brown; feathers of the nape and sides of the neck each with a broad white subterminal bar, together forming a white-spotted collar; lores and a short superciliary stripe white. Quills blackish, with umber-brown bars extending across both webs and becoming whitish-buff towards the margins of the inner webs; the outermost primary shorter than any of the others. Tail-feathers

dark brownish-black, the middle pair with three and the outer pairs with five large, rounded, white spots on the inner web only. Throat, middle of the chest, and under tail-coverts white; sides of the chest and flanks brown mixed with whitish-buff; middle of the chest, breast, and belly whitish-buff, each feather with a large, terminal, round or oval spot of dark brown; under wing-coverts pale buff. Iris bright yellow; bill dull yellow; feet yellow, claws yellow with black tips. Culmen ca. 12 mm.; wing 105; tail 70; tarsus about 20.

This type-specimen is the only one that I have seen. It was shot by Nkolo, who discovered it through the noise made by other small birds mobbing it as it sat hidden in a thicket.

AGAPORNIS PULLARIA. [Kô-nkaé.]

Sharpe, *Ibis*, 1904, p. 605; 1907, p. 428; Bates, *Ibis*, 1905, p. 89.

One of the prettiest sights I ever recollect was five or six Kô-nkaé flying up from a little stream where they had been bathing, the blue of the rump-feathers shewing very conspicuously.

No. 4318, ♀, was shot by my boy as it came out of a hole in an ants' nest (*njak*) high up in an *aseng* tree, near the village. I went to see the place, and the boy climbed up and began to chop the *njak*, which was hard and earthy and firmly attached to the large tree-stem—a different kind of *njak* from the one in which a Woodpecker's nest was found (*cf.* 'Ibis,' 1909, p. 20). The big ants inhabiting the *njak* bit him so cruelly that he had to come down. The tree was then chopped down; but the hole in the *njak* was found empty. I suppose the hole had been excavated by these birds; the mate of the one killed was seen in the tree-tops near by. How do they endure the ants? They must work so gently that the ants are not disturbed. These fierce ants would be an excellent defence for the birds against robbers of their nest.

The ova and oviduct were not yet enlarged in this example. These most loving birds must keep house together long before they rear their brood.

AGAPORNIS ZENKERI. [Emolé.]

Sharpe, Ibis, 1904, p. 605 ; Bates, Ibis, 1905, p. 89.

Nos. 4282, 4285-6, 4289, 4290 ; all males with testes much enlarged. The stomachs contained the little fig-like fruits of the *étóp* tree. Irides yellow ; feet greenish-grey ; bills slaty-black.

The five specimens enumerated above were shot with bows and arrows on three successive days, together with some others that were damaged, in a certain *étóp* tree, a small kind of fig, the bark of which formerly furnished the bark-cloth of the people. The little Parrots had gathered to feed there, along with the common species, *A. pullaria*. It is curious that there were no females among the birds that were killed, as this was not the case with *A. pullaria*.

Agapornis zenkeri seems to be found only where the two species collect to feed in such wild fruit trees as that mentioned. The name *Kó-nkaé*, meaning "Grass-Parrot," is not given to this species and would not be appropriate.

CORYTHÆOLA CRISTATA. [Kunduk.]

Bates, Ibis, 1905, p. 91.

Nos. 4098, 4387. Both ♂. Bitye, R. Ja.

No. 4395. ♀. Bitye, R. Ja ; two empty sheaths of ova in ovary and no third found.

On the 19th of last August a man brought me an egg that he said was that of a Kunduk—he saw the pair of birds fly out of a low *akak* tree (*Grewia*) along a forest path. By getting up on a stump he could bend down the twigs and reach the nest. I kept the egg, and a few days later had an opportunity of verifying the man's statement ; for a female bird, No. 4395 (see above), was brought in with bits of egg-shell sticking to the feathers of its breast, where there were shot-wounds, the bird having been killed by my hunter Nkolo on its nest. These bits of shell were exactly like the egg the man had brought, and both were so peculiar that they must have belonged to the same species. Nkolo shot this bird on its nest high up in a tree, and from the accounts given by others the Kunduk seems usually to build high.

The egg mentioned above is a short and perfectly oval in shape and measures 50×43.5 mm. It is pale green or greenish-white, and has, like the bits of broken shell mentioned above, a very peculiar surface, being glossy and smooth, with the exception of scattered minute bosses, or pimple-like projections, all over the surface.

TURACUS MERIANI. [Mba.]

Sharpe, Ibis, 1904, p. 613; 1907, p. 435.

No. 4067. ♂ ad. Bitye, R. Ja, Dec. 1909.

The occurrence of this specimen at Bitye shews that there is not such a sharply defined boundary as I had supposed between this coast species and *T. persa*, the common one at Bitye (*cf.* 'Ibis,' 1909, p. 13).

TURACUS PERSA. [Mba.]

Turacus persa persa Neumann, Nov. Zool. xv. p. 374 (1908).

Turacus zenkeri Sharpe, Ibis, 1907, p. 435; 1909, p. 13.

The distinguishing character of Reichenow's species *T. zenkeri*, viz., the width of the white line under the eye, is said by Neumann to be of no value.

I have watched half-a-dozen "Bemba" of this species, on the edge of the forest near Bitye, chasing one another, and playing and "cawing" in the tree-tops. Two of them alighted on a limb and performed some curious antics. Sometimes they would touch bills, as if kissing; sometimes one would touch the plumage of the other with its bill. Then one of the pair would run away from its mate, along the limb, then turn and run back; and when they met, they would again touch bills. While they were going through this performance their crests were flattened back, not erected as they usually are.

Additional eggs have been brought, in two cases with the sitting birds shot on the nest; in another instance with the statement by the bringer that he saw the Mba fly off. All these eggs resemble the two described ('Ibis,' 1909, p. 13) except in shape. The egg that was brought in without the bird measures 35.5×34.5 mm.; a single fresh egg (another would doubtless have been laid) brought with the bird

measures 31.5×32 mm.; two eggs brought with another bird measure 37×34 and 36×34 mm. Thus all these eggs were nearly spherical.

One sitting Mba brought with eggs proved to be a male, and was shot at midday; the other, a female, was shot at evening. Another male Mba, shot on the nest about noon, was brought in along with a broken egg.

COCCYTES JACOBINUS.

Reichenow, V. A. ii. p. 78.

No. 4537. ♂ (testes small). Bitye, Dec. 16, 1910.

This is the first specimen that I have obtained. It was shot on a papaw near my house, where it perched without fear. It had the appearance of a sick or starved bird; its stomach was full of a very common kind of grasshopper, which, from their disagreeable smell (and taste, too, I presume), no bird of the country will touch.

COCCYTES GLANDARIUS.

Reichenow, V. A. ii. p. 81.

No. 4559. ♂ (testes very small). Bitye, Jan. 2, 1911.

Curiously enough, an example of a second species of *Coccytes*, a straggler in the country, was shot a couple of weeks after the specimen of *C. jacobinus* mentioned above, and in the same way. It was seen boldly sitting on a palm-frond not far from my house. Its stomach was full of the same disagreeable kind of grasshoppers as the other, though No. 4559 had not been reduced to such food by starvation, for it was fat. Perhaps these stranger birds are unable to compete with the regular inhabitants of the chase as regards tempting food.

PACHYCOCCYX VALIDUS.

Sharpe, Ibis, 1907, p. 435.

No. 4220. ♂ imm. Bitye, R. Ja, June 18, 1910. Iris dark brown; bill black above, light beneath; eyelids and feet yellow.

This is the second specimen of this rare species that has been brought to me; like the first, it had been killed in the forest by a native. In both cases I have recorded the contents of the stomach; these consisted of insects of many

different kinds, but there were no caterpillars, or caterpillar-hairs sticking to the lining of the stomach. The last bird, while having white spots in the plumage, was not very young, and must have caught these insects itself.

CUCULUS CANORUS.

Reichenow, V. A. ii. p. 89.

No. 3623. ♀ somewhat imm. Bitye, Apr. 22, 1909.

No. 4453. ♀ young. Bitye, Oct. 29, 1910.

CUCULUS SOLITARIUS.

Sharpe, Ibis, 1904, p. 613; 1907, p. 435.

No. 4330. ♂ ad. No. 3816. ♀ ad. Bitye, R. Ja.

Nos. 3921, 4024, young; 4216, young, with the plumage not grown.

These three young birds, with one like them, No. 1139, identified by Sharpe as *C. gabonensis* ('Ibis,' 1907, p. 436), I believe to be the young of *C. solitarius*, mainly because they are not at all like the young of *C. gabonensis* described below. Moreover, younger birds of *C. solitarius* collected by the Ruwenzori Expedition (*cf.* Grant, Trans. Zool. Soc. xix. p. 424) seem to have resembled them, and so does a specimen in the British Museum from Fantee. They have white edges on all the black feathers and a white spot on the back of the head; thus agreeing exactly with Reichenow's description of the young of *C. gabonensis*, which, as will appear below, they cannot be. I can only suppose that, like Sharpe, Reichenow has mistaken for that species the young of *C. solitarius*, especially as he seems to suppose that the latter species is not found in Cameroon.

Nos. 3921, 4024, and 4216 have the feet yellow; No. 4216, a very young bird, had the inside of the mouth and the tongue uniform deep orange.

CUCULUS GABONENSIS. (Text-fig. 13.)

Sharpe, Ibis, 1907, p. 436.

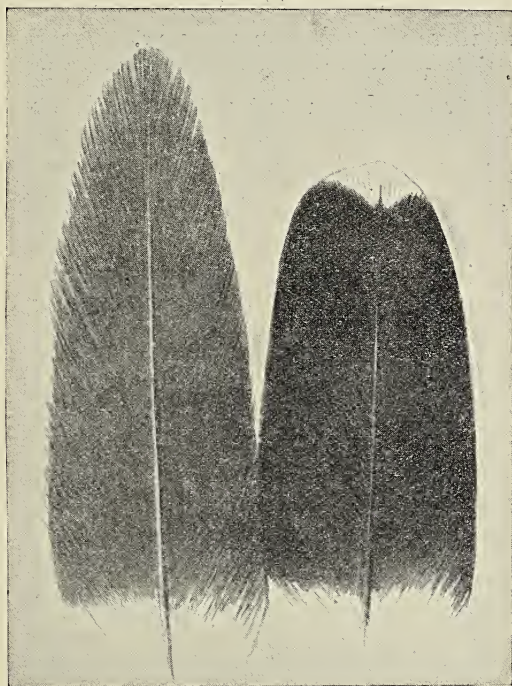
Cuculus clamosus Sharpe, Ibis, 1904, p. 614.

Cuculus aurivillii Sjöstedt, K. Sv. Vet.-Akad. Handl. xxvii. p. 47 (1895).

I have a series of eight specimens, all collected at Bitye

except one, which was shot at a place further down the Ja. These shew all gradations from (1) a perfectly black first plumage (Nos. 3898 and 3904); through (2) a moulting transitional state, in which some of the chestnut feathers of the throat and chest and some of the barred feathers of the under parts are appearing among the black ones (Nos. 3044 and 3141); and (3) a nearly adult plumage with some dark

Text-fig. 13.

Ends of the middle pair of rectrices of *Cuculus gabonensis*.

bars on the throat (Nos. 4411, 4091, and 3616); to (4) the fully adult plumage (No. 4291). The specimen that Sharpe called *Cuculus clamosus* ('Ibis,' *l. c. supra*) is just like No. 3141. None of these birds have white-edged feathers. The feet are whitish, becoming yellowish only in older examples. The first two mentioned above, in which the plumage is not grown, have the upper surface of the tail perfectly black

and the under surface with faint whitish feather-tips, which tend to disappear in somewhat older birds. A nearly adult bird of this species with perfectly black tail was evidently the bird described by Sjöstedt as *C. aurivillii*. No. 4091 was moulting the tail, having five old and worn rectrices and five new ones, some not grown. The new ones have white tips, and spots or bars, as in the adult, the old ones have no white.

In connection with the tail of specimen No. 4091 may be noted also the curious fact that the old feathers are much longer and more pointed than the new. The figure (text-fig. 13, p. 501) represents the middle pair of rectrices, one new, the other old, drawn to exact size. The shorter new feather seems to me fully grown; but even if it were not, the difference in shape is remarkable. I have noticed in other Cuckoos and in many other widely different birds the fact that the rectrices are both longer and more pointed in the young than in the adult plumage.

One more thing remains to be told about the youngest of these specimens of *Cuculus gabonensis*, No. 3898. It was brought in by a man who called it a young *akótoo* (*Laniarius leucorhynchus*); he had shot it with his bow and arrow in company with its "parents." I told him I wanted the parents, and soon a *Laniarius leucorhynchus* was brought; he said he had found it still crying for its child. The way in which this was told seemed to make it improbable that there was any deception. Moreover, the same kind of food was found in the stomach of the "parent" Bush-Shrike as in that of the young Cuckoo.

CHRYSOCOCCYX FLAVIGULARIS.

Sharpe, Ibis, 1907, p. 437.

No. 3263. ♀ (ova, oviduct enlarged). Assobam, Dec. 1908.

This is the second specimen, and the first female example, I have obtained of this rare Golden Cuckoo. When the first, a male, was shot by my boy at Bitye five years ago, I was close by on a forest path, and heard the bird's loud clear call, resembling that of its congeners.

INDICATOR MACULATUS.

Sharpe, Ibis, 1907, p. 440.

No. 4204. ♂. Bitye, June 1910. Iris dark brown; bill blackish; feet dull yellow and grey. Nostrils of a long-oval shape, with a raised rim.

In this specimen the small feathers of the forehead, and especially those of the sides of the head, are margined with yellowish white, making those parts appear streaked. The specimen previously reported also had this character, but in a less degree; while neither the type-specimen nor Gray's plate shew it at all. Reichenow mentions it only as regards the forehead. Probably these whitish streaks are a mark of the fully adult bird, like the streaks on the throat of *Trachylæmus purpuratus*.

INDICATOR STICTOTHORAX.

Sharpe, Ibis, 1907, p. 440; Bates, Ibis, 1909, p. 15.

No. 4272. ♀ (not breeding). Bitye, July 1910.

My previous specimens were obtained in the forest near the coast. This is a very different bird from *I. maculatus*.

INDICATOR CONIROSTRIS.

Sharpe, Ibis, 1904, p. 616; 1907, p. 440; Bates, Ibis, 1909, p. 16.

Another nestling *Indicator*, probably *I. conirostris*, has been found in the hole of a Barbet, this time *Barbatula leucolæma*. The old Barbet was caught in the hole with it, but there was no other nestling. The hole had the entrance just the size of an average finger-ring, and much too small to admit a grown Honey-Guide of this species. The egg may, of course, have been carried and dropped into the hole by the bird with its bill. It is a harder problem to explain how the young Honey-Guide could ever have got out of the hole if it had remained till it grew larger.

This nestling *Indicator* had the openings of the eyes very small. It had sharp-pointed tubercles on the heels; the skin of the nestling No. 2416, already mentioned ('Ibis,' 1909, p. 16) also shews these tubercles.

Two adult female specimens that were found to be just

ready to lay were shot in the neighbourhood of dead trees containing the holes of Barbets (*Gymnobucco*), and seemed to be led to the spot by the instinct which makes them seek such a place to deposit their eggs. One had in the oviduct a crushed egg with complete shell; the bits of egg-shell were pure white, without gloss, and were not very thin.

MELIGNOMON ZENKERI.

Reichenow, V. A. ii. p. 113; Bates, Ibis, 1909, p. 17.

No. 3705. ♂. Biteye, R. Ja, June 1, 1909.

No. 4073. ♀ breeding. Esamesa, R. Ja, Jan. 1910.

Both had the iris brown; bill dark horny, yellowish at the base beneath and at the gape; feet dull yellow. Nostrils with a long-elliptical raised rim.

PRODOTISCUS INSIGNIS.

Reichenow, V. A. ii. p. 115.

Heterodes insignis Cassin, Proc. Ac. Sc. Philad. 1856, p. 157; 1859, p. 142, figure.

Indicator emini Shelley, P. Z. S. 1888, p. 43.

No. 4093. ♀ ad. Biteye, R. Ja, Feb. 11, 1910. Iris dark brown; bill black; feet slate-coloured.

No. 4076. ♀ yg. Esamesa, R. Ja, Jan. 29, 1910. Iris brown; bill above dark at base, whitish at tip, beneath yellowish; feet grey.

My specimens are exactly like the type of Shelley's *Indicator emini*, which, as pointed out in a MS. note with that specimen, written by Neumann, differs in some slight particulars from Cassin's description of specimens from the Gaboon region. If there are two subspecies or geographical races, my specimens belong to that found by Emin on the eastern border of the Congo Basin, and not to that found near Gaboon.

The young bird (No. 4076) is nearly like the adult, but has a darker and less yellowish plumage.

The skins of these birds were not especially tough, like the skins of *Indicator*. The food of the young one had been small Orthoptera, probably given it by a foster-parent.

MELICHNEUSTES ROBUSTUS.

Melignomon robustus Bates, Bull. B. O. C. xxv. p. 26 (1909).

The type specimen is the only example I have seen of this new Honey-Guide. But another species has been described by Reichenow (Orn. Monatsb. 1910, p. 160), which seems to resemble mine except in colour, and has been made the type of a new genus, *Melichneustes*, distinguished by the form of the tail, which I pointed out (Bull. B. O. C. *l. c.*). This last species, *M. sommerfeldi*, was found in the region of the Dume River, not very far distant, to the north-east, from where I have collected. It is remarkable how many new forms of Indicatoridæ, rare and retiring forest-birds, West Africa has yielded.

My specimen of *M. robustus* was shot with bow and arrow. It had in the stomach small flakes of wax, and, like other Honey-Guides, had a very tough skin.

LYBIUS BIDENTATUS. [Ekuku.]

Sharpe, Ibis, 1904, p. 616; 1905, p. 466.

Nos. 4381 and 4382 (♂ & ♀) were a pair caught, with four young, in their hole in the tall dead stump of an *aseng* tree with dry corky wood. The hole was at about a man's height above the ground. The entrance had been about two inches in diameter (it had been chopped larger when I saw it, to admit the man's hand in removing the birds); and the excavation ran down a foot and a half. At the bottom there were a number of decomposing portions of insects which had passed through the bodies of the birds and had an extremely offensive smell. The birds had been stopped up in their hole by a man who saw them both enter, about 8 or 9 o'clock in the morning. The food found in the stomachs of the nestlings consisted of insects, part of a large Cetonid beetle being among them. The adults of this species feed mainly on fruits. The eyes of the nestlings were very small. Both these nestlings, and some nearly full-grown young birds obtained at another time, had a heel-pad of sharp-pointed tubercles.

Another pair of old birds of this species, caught together in a hole in exactly the same way, had neither young nor eggs, and dissection shewed that the female had not yet begun to lay.

GYMNOBUCCO PELI. [Ovól.]

Sharpe, *Ibis*, 1904, p. 616; 1907, p. 441; Bates, *Ibis*, 1909, p. 17.

Nos. 3876-8 were two nearly fully feathered nestlings and one old bird, which were caught in holes in dead trees that had been stopped up with the birds in, together with a number of other nestlings. The nestlings have the nasal tufts well developed; the head is not bare as in adults, but covered with short feathers, and the bill is of a yellowish horn-colour. They have sharp tubercles on the heels.

BARBATULA FLAVISQUAMATA. [Omvek.]

Sharpe, *Ibis*, 1904, p. 618; 1907, p. 442.

All my numerous specimens have dark mottlings on the breast, a character which serves as one of the distinguishing marks of this species from the nearly allied *B. stellata* and *B. scolopacea*. The colour of the iris is creamy or greyish-white.

Two breeding-holes of this species have now been found, the birds, in each case, having been caught in them. It is unnecessary to describe these holes, as those of all species of *Barbatula* are alike, and the description given ('*Ibis*,' 1909, p. 18) will serve for all. In one of the two holes of *B. flavosquamata* four adult birds were caught, two males and two females. Judging from the condition of the females, the eggs found must all have belonged to one pair of birds, and the other pair were intruders. Four eggs were reported to have been found in the hole, but only one was received intact; it measured 17 × 13·5 mm. Two eggs brought in at another time, in a section of a dead stump, along with the bird, measured 18·5 × 14·5 and 18·5 × 14 mm.

BARBATULA ERYTHRONOTA. [Omvek.]

Reich. V. A. ii. p. 146.

No. 3451. ♀ breeding. Bitye, R. Ja, Feb. 1909.

No. 4360. ♂ " " " Aug. 1910.

This is the most beautiful of the small Barbets and is not common, for the two specimens mentioned above are the only ones that I have procured. The first was brought alive, imprisoned in its nesting-hole in a section of a small soft-wood stump. This hole was exactly like those of other small Barbets, and contained, besides the female bird, two nestlings.

BARBATULA LEUCOLEMA. [Omvek.]

Sharpe, Ibis, 1904, p. 617; 1907, p. 442; Bates, Ibis, 1909, p. 18.

I have recently procured a number of these Barbets caught in their breeding-holes, which were like those already described ('Ibis,' 1909, p. 18) and are common in the tall stumps left in clearings. Such birds are not always actually breeding, though many of the holes contained eggs or nestlings. These are to be found during most months of the year, thus hardly confirming my first conclusion that the small Barbets prefer the dry seasons for breeding.

The nestlings were generally two in number, but once three were found in one hole. They all had sharp-pointed tubercles on the back of the tarsal joint.

When eggs were found, they generally numbered two; in one instance three. These eggs vary in length from 15 to 18 mm., and in width from 12 to 13 mm.; otherwise they are as already described.

BARBATULA SUBSULPHUREA. [Omvek.]

Sharpe, Ibis, 1904, p. 617; 1907, p. 441; Bates, Ibis, 1909, p. 18.

A few nesting-holes of this species have been found, and are exactly like those of *B. leucolama*, being placed in similar situations. One contained two broken eggs when it reached me, and two young birds were found in each of the others. These had heel-pads, similar to those described above.

One nesting-hole containing young was clean inside, and I think this was true of all the holes of *Barbatula*, which are thus very different from those of *Lybius bidentatus* (*vide supra*, p. 505).

Two nearly fledged young of *B. subsulphurea* that had been taken from a hole, when liberated remained near the house, making a continual tinkling noise, much like the call of the adult birds. These nestlings were expressing distress or hunger by the same sound that is used by the species as a mating call.

TRACHYLEMUS PURPURATUS. [Ekuku.]

Sharpe, Ibis, 1904, p. 618; 1907, p. 442; Bates, Ibis, 1905, p. 93.

No. 4404, together with a single nestling, was taken from a hole in a tree. The young bird had the eyes very small and apparently functionless; it was furnished with heel-pads.

In the ovary of No. 4396 three or four empty ovum-sheaths were found. It was caught in its nesting-hole, which contained four eggs, one fresh and the others nearly so. These eggs, which are pure white and somewhat glossy, measure respectively 29.5×19.5 , 29×20.5 , 28.5×19.5 , and 29×18 mm.

DENDROMUS CAROLI.

Sharpe, Ibis, 1904, p. 619; 1907, p. 413.

No. 3352 was shot, at Assobam, as it was coming out of its nesting-hole; it was a male with large breeding-organs. Two eggs brought in were said to have been taken from the same hole. They have the "Woodpecker"-gloss and whiteness, but are stained. They measure 26×19 mm.

No. 3357, also shot at Assobam, was a female with an egg in her oviduct. The condition of her ovary afforded evidence that two other eggs had already been laid, and there were large ova, one or more of which would perhaps have become mature eggs; making a total of, at least, four eggs.

No. 4087, a half-fledged young bird, was one of a pair

caught in a hole in a tree. The plumage differs from that of adults in that the light spots of the under parts are white.

Both the breeding birds mentioned above were killed in January, and the young one in February. These are the driest months of the year.

DENDROMUS NIVOSUS.

Sharpe, *Ibis*, 1904, p. 619; 1907, p. 443.

Dendromus efulensis Chubb, Bull. B. O. C. xxi. p. 92; Bates, *Ibis*, 1909, p. 20.

Among a considerable number of these birds some have the backs as golden in tint as specimens from the Gold Coast.

Three more nests, or rather breeding-holes, of this species have now been brought to me, in every case accompanied by the bird that had been caught in the hole; only one of these birds was a female, two were males. These holes were all cavities in the globular pendant nests of termites, which are huge balls, earthy and heavy, of the size and shape of a football, constructed around the slender stems of certain shrubs and vines. The situation of these breeding-holes thus resembled that of the hole of the same species formerly described ('*Ibis*,' 1909, p. 20); but that was in a light and papery ants' (not termites') nest. The structure in which the hole of *Agapornis pullaria* was found (see notes on that bird, p. 496) was yet another kind of ants' nest.

In each of the three more recent holes of this Woodpecker were two eggs, pure white, with thin glossy shells, measuring—(1) 25 × 16 and 22·5 × 16 mm.; (2) 21 × 16·5 and 21 × 17·5 mm.; (3) 23 × 16 and 22 × 16·5 mm.

The months in which these eggs were found were April, June, and December; those mentioned in the former paper were found in January. These months belong to the dry season, and to the less rainy of the two rainy seasons.

DENDROMUS PERMISTUS.

Sharpe, *Ibis*, 1904, p. 619; 1907, p. 443.

No. 4071, a young bird with the feathers not quite grown, differs markedly from adults in the plumage of the head.

This is black above, but, instead of the small round yellow spots or dots on the crown of the adult female, there are very small whitish shaft-streaks to the black feathers of the crown. The throat is white with narrow black bars.

COLIUS NIGRICOLLIS.

Reich. V. A. ii. p. 203.

Colius nigriscapalis Sharpe, Ibis, 1907, p. 434; Bates, Ibis, 1909, p. 21.

Many nests, containing nestlings or eggs, have now been found. These have been confined, so far, to the months of March and April and from August to November. In several cases the sitting bird killed or caught on the nest proved to be a male.

The nestling has the inside of the mouth slaty-black and the tongue yellow, so that when the mouth is open the tongue is very conspicuous. The number of cubital remiges in several nestlings was at least nine (it was uncertain whether another one was a quill or a covert). The number in *Colius affinis* was found by Mr. Pycraft ('Ibis,' 1907, p. 233) to be eight.

EURYSTOMUS NEGLECTUS. [Kamang.]

Eurystomus gularis neglectus Neumann, Orn. Monatsb. 1908, p. 28.

Eurystomus gularis Sharpe, Ibis, 1904, p. 606.

Nos. 2240, 2946. Both ♀. Bitye, R. Ja.

Nos. 3262, ♀, & 3226, sex? Assobam, Bumba R.

Neumann describes several well-marked characters in which this species differs from typical *E. gularis*, and these are all to be seen in my birds except as regards the blue colour on the basal part of the middle tail-feathers; this is well-marked in only one of them, No. 3226, which may have been a male; in the others those feathers shew only a bluish tinge when held in a certain position.

This is a forest species, while *E. afer* is a bird of open country; the latter has been found at Bitye ('Ibis,' 1907, p. 428) in a district where there is much cultivated or old

cleared land, but not at Efulen or at Assobam, both situated in country that is almost all forest.

“Kamangs” are fearless and perch in conspicuous places. At Bitye a pair of them, that probably had a nest in some high dead limb near by, used to be heard continually and seen chasing the Kites over the village farms.

BYCANISTES SUBQUADRATUS. [Miam.]

Cabanis, Jour. f. Orn. 1880, p. 350; Grant, Trans. Zool. Soc. xix. p. 431.

Nos. 4119, 4152, 4421. All ♂, adult. Bitye, R. Ja. Length of wings 320–350 mm.

Nos. 4211, 4408 & 4422. All ♀, adult. Bitye, R. Ja. Length of wings 300–315 mm.

Iris reddish-brown; bill black, with a dirty white spot in the middle on the casque; feet black, but the soles grey. The measurements of these specimens shew a bird hardly as large as *B. albotibialis*; but otherwise they agree perfectly with the original figure and description of *B. subquadratus*.

This Miam seems to be as plentiful at Bitye as the other (*B. albotibialis*), or more so. The pair, Nos. 4421 & 4422, were brought down at one shot by my boy; there were four or five of them early one morning in a small tree in the *ékótók*, not far from my house. The tree was not a fruit-tree and the birds were not feeding, but calling and chasing each other.

This species makes quite a different call from *B. albotibialis*.

BYCANISTES ALBO-TIBIALIS. [Miam.]

Bates, Ibis, 1905, p. 90; Sharpe, Ibis, 1907, p. 430.

The only specimen I need mention is No. 4557, a young male: irides whitish-grey; bill of a uniform pale horn-colour; feet brown and grey. The bill has no casque, though the base of the upper mandible is greatly elevated above the forehead; the bill is short (culmen 110 mm.) and smooth. A few of the feathers above the eye are grey or have grey margins. The plumage is otherwise like that of the adults.

The young Miam above described was kept alive, at Bitye,

for a month. It had been caught by a native woman who was working in her clearing, and seemed to be weakly and unable to fly, though apparently unhurt. In the choice of its food this bird acted as if guided by a sense of smell; for it at once took pieces of banana when held near its bill, without first tasting of them, while it would not at first touch guavas or papaws (*Papaya*). All these things must have been equally strange to it by sight. It may be remarked, by the way, that no wild bird ever has an opportunity of eating bananas or plantains in this part of Africa, at least, as they never ripen on the stalk or "tree." The name "Plantain-eater" is a ridiculous misnomer, as applied to any bird in West Africa.

HALCYON FORBESI.

Halcyon torquatus forbesi Reichenow, V. A. ii. p. 280.

No. 4034. Imm. (culmen 40 mm.). Bite.

No. 4340. Not quite mature (culmen 45 mm.). Bite.

These specimens shew their immaturity, in different degrees, by a mixing of the black and red colours of the bill, which in adults are clearly separated, the red above and the black below; and by a wash of yellowish-brown on the plumage of the under parts. No example of this species had previously been obtained by me, but last year I got specimens of it and the similar, but much bluer, *H. malimbicus* in the same locality. One of the specimens of *H. malimbicus* was likewise immature (culmen 38 mm.) and shewed the same mixing of colours in the bill, but none of the colour on the under parts mentioned above; even this immature bird is much bluer than the specimens of *H. forbesi*.

H. senegalensis and *H. cyanoleucus* form another example of a pair of species very similar to each other, found in the same locality.

One of my specimens of *H. malimbicus* was shot on the border of an army of driver-ants. I have more than once seen a *Halcyon* of some species among the birds that always gather about an army of drivers, to feed on the insects and other small creatures that are routed out of their hiding-places and compelled to flee for their lives by the terrible ants (see

under *Astur toussenellii* above, p. 493). In the stomachs of birds shot while so engaged, I have more than once found driver-ants that had been swallowed incidentally, attached to the bodies of their insect prey, for a driver-ant never lets go its hold. This, I believe, furnishes an explanation of the statement made in Mr. Pycraft's 'History of Birds' (p. 406)—authority not given—that *Halcyon cyanoleucus* subsists on ants. The food of all species of *Halcyon*, so far as I have observed, is beetles, grasshoppers, cockroaches, small frogs, &c.; in the stomach of one I found a whip-scorpion. These are captured in a manner similar to that in which the more typical Kingfishers catch fishes; that is, by a swift arrow-like plunge, the heavy bill serving as the arrow-head and transfixing or striking the prey. Once, when sitting in a native house, I heard something repeatedly strike the roof of palm-leaf thatch with force, as if a small stone had hit it. I found that the noise was caused by a *Halcyon* (I do not know of which species) that was darting from a tree near by upon the cockroaches that crawled out on the roof.

HALCYON BADIUS.

Sharpe, Ibis, 1904, p. 608; 1907, p. 429; Bates, Ibis, 1909, p. 23.

Of all the species of *Halcyon*, this is more strictly a bird of the forest than any other, and is naturally the one most often met with in our forest region. It was found also at Assobam. It has a loud note, quite different from the cries made by the other species.

Nos. 4497 and 4498 were a pair of nestlings said to have been taken from a hole in an earthen ants' nest made in a tree by the big black species that bite, the same kind in which the hole of the *Kô-nkaé* was found (see notes on *Agapornis pullaria* above, p. 496). The bills are black with red tips, a white egg-tooth still persisting. The culmen measures only 21 mm., though the birds are large enough to have the wing-quills three-fourths grown. The wings in these birds were seen to be eutaxic.

Another clutch of two eggs of this species was found and brought to me along with the bird, No. 3941, a male,

which was shot "just after it had left its nesting-hole." The hole was not in a tree-stem, but in a large hanging *njak*, which was brought with the eggs in it. This *njak* seems to have been of the kind made by termites, though at the time I thought it to be an ants' nest (see notes on *Dendromus nivosus* above, p. 509). It was nearly spherical, measuring 9 by 7 inches in greatest and least diameters, and was solid and heavy. None of the insects were in it when it was brought, and I think the hole may have been originally made by Woodpeckers. I have never seen anything to indicate that *Halcyon badius* eats ants or termites. All the stomachs examined have contained remains of Orthoptera and Coleoptera.

MYIOCEYX LECONTEI.

Ispidina lecontei Cassin, Proc. Ac. Sc. Philad. 1856, p. 158.

Myioceyx ruficeps Sharpe, Ibis, 1904, p. 607; 1907, p. 429.

A series of these little Kingfishers of different ages shews conclusively, what Reichenow already suspected, that *M. ruficeps* is merely the adult of the species already described by Cassin from a young specimen. No. 3328 in my series of specimens agrees exactly in every particular with Cassin's description. Other specimens are very similar to it, and others shew the gradual change to the adult plumage, the black of the crown being replaced by rufous, and likewise a gradual change in the colour of the bill. I have also specimens of a still younger stage than that seen in No. 3328. In this the bill is much shorter, and the feathers of the breast have narrow dark edges; but the most interesting point about these very young birds is that the bill is not so flat, and is pointed, instead of truncated, at the tip, as in older birds. The bill in the young bird does not shew the peculiarity which has caused this species to be made into a separate genus.

It is worth recording that one specimen, No. 3328, had fourteen rectrices, all alike in respect to newness or wear; and that another example, which was not preserved, had thirteen rectices, while all others examined had the normal number of twelve.

ALCEDO GUENTHERI.

Sharpe, Ibis, 1904, p. 607; 1907, p. 429.

Five young birds of this species, with most of the plumage still in the sheaths, giving them the appearance of being covered with porcupine quills, were brought to me alive in December. The boy who brought them said he had dug them out of a hole in the side of a pit on the bank of a small river near Bitey. While they remained alive for a few hours in a box, one of them continually made a most curious noise, something between a rattle and a fizzle, rhythmically varied in loudness by the opening and closing of the bill. Only one bird did this, and always the same one, while the rest remained silent. When that one was removed, another after some minutes took up the rôle of "soda-water bottle"; and when *that* one was removed, *another* commenced. There was always one "fizzler" only.

The large number, five, of nestlings is noteworthy as being unusual in this country. The wings of these young birds were found to be eutaxic.

This species was also found at Assobam.

CAPRIMULGUS BATESI. [Mvômvôt.] (Plate IX. fig. 10, egg.)

Sharpe, Ibis, 1907, p. 432; Bates, Ibis, 1909, p. 25.

All the birds obtained in breeding condition and the eggs found, both before and since my former note on this species, were taken in one or the other of the two dry seasons, and most were in March, at the end of the driest time of the year.

A young bird not completely feathered was brought to me in April. The abdomen was covered with long buff down, and there was some similar down on the legs. The pectination of the middle claw was not well developed, there being only a wide margin, with a few shallow notches, on part of the length of the claw.

The egg figured here is the one that was brought in with No. 2937, the specimen from which the figure of the bird was drawn (*cf.* 'Ibis,' 1909, p. 25, pl. i.).

CAPRIMULGUS BINOTATUS.

Sharpe, *Ibis*, 1904, p. 612.

No. 4107. ♂. Biteye, R. Ja, February 1910. Length of wing 140 mm.

This is the second example of this rare and peculiar Nightjar that I have obtained, the other having been killed at Efulen eight years before at the same time of year. No. 4107 is smaller than the measurements given by Reichenow's description, and there is a distinct diagonal buff band on the scapulary feathers: both these characters may be marks of the male sex, supposing the original description to have been made from a female.

SCOTORNIS CLIMACURUS.

Reichenow, *V. A.* ii. p. 368.

No. 3425. ♀. Biteye, R. Ja, February 1909.

Two other specimens were shot, one at Assobam in January, and a second at the edge of a clearing at Biteye on Christmas Day, but both were badly damaged by shot. Thus all were obtained in the principal dry season; and none were in breeding condition. Like the Pennant-winged Nightjars (see '*Ibis*,' 1909, p. 26) these birds seem to wander into the forest in the dry season only.

The one shot last Christmas rose in front of me as I was walking along the border of a field of ground-nuts, and settled on a small log not far off. There it went to sleep again, and remained till I returned with my little collecting-gun. No. 3425 was shot on the bare ground at dusk; it had been making short flights, as if catching beetles in the air and returning to the ground again.

MACRODIPTERYX MACRODIPTERUS.

Reich. *V. A.* ii. p. 370.

No. 3422. ♀. Biteye, R. Ja, February 1909. Length of wing 152 mm.

This specimen is somewhat small, and lacks the rusty neck-band, but seems to belong to the present species. It was apparently a straggler, and was shot in the driest time of the year, as were the specimens of the larger pennant-winged

Nightjar (see 'Ibis,' 1909, p. 26), of which another example was shot in March, also in the dry season. A male with long wing-plumes, belonging to one of these species, has also been seen at Bitye at the same season. The birds are always seen on the open grounds of clearings, and not in the forest. I almost walked on one when crossing a newly made clearing; it was on the ground, amongst the brown and yellowish dry leaves and grass, which it so closely resembled in colour that if it had not flown I might almost have stepped on it without seeing it.

CHÆTURA SABINII. [Mvaé.]

Reich. V. A. ii. p. 388; Bates, Ibis, 1909, p. 27.

Four more specimens have been obtained, adult males and females. The length of the wing varies from 121 to 125 mm.

Were it not that these Swifts have a propensity to fly into houses, doubtless taking then for caves or large hollow trees, I should have seen less of them than I have. Two of my specimens were caught in native habitations. I have a number of times seen Mvaé dart past my house, and sometimes enter it, even clinging for a moment to the wall. One specimen was knocked down by a man with a stick as it came out of an old pit in the forest. I used to see a pair of Mvaé every day, coursing about in the vicinity of a large hollow tree, where they doubtless had a nest.

Two nests with eggs, taken from hollow trees, were brought to me, in each case with a bird. One, a male, was shot by my boy as it clung to the inside of a hollow tree, which was open above, giving light enough to shoot. There were three other birds, making two pairs, in the hollow. The other specimen brought with a nest was also a male. It had been caught with a butterfly-net by a boy who saw it enter a hollow under the half-rotten roots of an old tree, and secured it as it flew out, afterwards taking the nest. These nests were made of small bits of twigs stuck together, and were shaped like half-cups, glued to the wall of the hollow tree. In one were three pure white eggs, measuring,

respectively, 18×12.5 , 17.5×12.5 , and 17×12 mm. In the other were two similar eggs; one was broken, the other measures 17×12 mm.

TACHORNIS PARVUS.

Tachornis parvus brachypterus Reichenow, V. A. ii. p. 386.

No. 4449. ♂ (testes small). Biteye, Oct. 1910.

I had seen these Palm-Swifts about the cocoa-nut trees at the coast, but had never noticed them in the interior till last year. During this time they were not infrequently seen sailing to and fro about some palm-trees for a few minutes at a time, and then disappearing; none were ever shot or even seen to alight. The specimen I at last obtained was picked up one morning after a storm on a path bordered on either side by tall wet grass.

PITTA REICHENOWI. [Kô'-afan.]

Sharpe, Ibis, 1904, p. 621; 1905, p. 467.

No. 4196. ♀, breeding. Biteye, May 1910. Inside of mouth and tongue orange (as in young birds, though this individual was adult). It was snared with a noose fixed on the ground in the forest, where it had been scratching.

No. 4417. ♂ (testes large). Inside of mouth and tongue red; iris dark reddish-brown; bill black, with a red spot on the culmen and a small one on the gonys; feet greyish-white. A brood-spot on the abdomen.

This last bird was brought, along with a nest and two eggs, from the big forest by a man who saw the nest on the branch of a fallen tree, higher than his head. He climbed to it and fixed a large *Phrynium* leaf over it and another under, in such a manner that by drawing a noose he could enclose the bird when it came back to the nest. Late in the evening he drew the string, and the next morning went and took his prisoner out, still alive.

The nest was too much disarranged to be described; it was large, and composed mainly of dried forest leaves, with some petioles and rootlets.

The eggs (Nos. 586, 587) measure 30×21 and 29×21 mm.

One was nearly covered with adhesive dirt, looking like that left by termites, though it was a fresh egg.

[Eggs Nos. 586 and 587 are of a regular oval form, slightly glossy; the ground-colour is creamy-white with small spots and rounded blotches of dark vandyke-brown and various shades of grey, mostly confined to the larger end.—O.-G.]

HIRUNDO SENEGALENSIS.

Reich. V. A. ii. p. 415.

No. 4300. ♂ (testes rather large). Bitye, July 1910.

This, the only specimen obtained, was shot with bow and arrow while it was getting clay on the path. The claws were remarkably sharp.

PSALIDOPROCNE PETITI. [Nguleyebe.]

Sharpe, Ibis, 1904, p. 621; 1907, p. 444.

An immature bird. No. 4294 has the under side brown, quite light and greyish on the abdomen. No. 3508 has some greyish-brown feathers among the new black ones.

No. 3954, a sitting female with two empty ovum-sheaths in the ovary, was brought to me with a nest, consisting of a pile of moss-like *Usnea*, and two white eggs. All were said to have been dug out of a hole in the side of a pit made to catch animals. The eggs have little gloss, and are very long, measuring 21×13 and 20×13 mm. respectively.

When I was having clay dug from a pit for making bricks, three pairs of these little black Swallows were seen during several days, sailing close over the pit whenever the work-boys were away. They had probably begun excavating to a slight extent; if so, they never alighted to work, but took a mouthful of earth in passing—I could not be certain whether they did this or not. They always passed in pairs, and were often heard to utter a low “weeping” note. Usually these birds are perfectly silent.

FRASERIA OCREATA. (Plate IX. fig. 12, egg.)

Sharpe, *Ibis*, 1908, p. 328 ; Bates, *Ibis*, 1909, p. 29.

A bird of the forest, this species has been seen in every locality where I have been in S. Cameroon, but was especially abundant near my camp at Assobam. Sometimes there were small parties of four or five, chasing one another with a buzzing or scolding noise. I occasionally heard some pleasing song-notes from one at Assobam, and two pairs were found breeding there. One pair seemed to be beginning to build in a knot-hole near the top of a small dead tree.

One sitting female was brought with a nest set between two stout twigs of a branch. This nest was composed of a large mass of fine fibres, with a good-sized cup-shaped cavity. The inside fibres appeared to be rootlets, and were very rough ; the feathers of the bird's breast were extremely worn, so as to be mere stumps, and had lost the white ends, making the bird's breast appear dark grey. A single nestling in this nest had the upper parts of its plumage covered with small light brown spots or speckles, thickest on the head, and the inside of the mouth orange.

Another sitting bird, shot with a little arrow in the head, was brought in at Bitye, along with a nest and two eggs. The nest was made of dry leaf-skeletons and stems, with no soft lining. It was said to have been taken from a small shallow knot-hole in a tree. The bird sat in this hole with only its head visible. One egg was broken ; the other measured 21 × 17 mm.

[One egg is of a wide oval shape and distinctly glossy. The ground-colour is light olive-green, longitudinally marked with smeared blotches and spots of bright umber-brown and dark grey, which conceal the greater part of the ground-colour.—O.-G.]

MUSCICAPA GRISOLA.

Sharpe, *Ibis*, 1904, p. 623 ; 1907, p. 446.

Dates of recent specimens, and state of plumage :—

No. 3546, March 30. Plumage new-looking.

No. 3934, September 27. „ worn.

No. 3986, October 23. „ „

(One not preserved) October 13. Plumage worn.

No. 4046. Imm., November 30. Plumage not worn; light tips on some wing-coverts.

The specimens with worn plumage shewed the effect of exposure to the sun and weather on the uncovered tips of the remiges. The tip of each of the longer quills was thin and transparent up to a point where it was overlapped by the next. This fading and thinning of the feather-tips must have taken place while the wing was folded, and is evidence of long days spent by the bird perched in the open, watching for insects.

ALSEONAX EPULATUS.

Butalis epulatus Cassin, Proc. Ac. Sc. Philad. 1855, p. 326.

Alseonax fantisiensis Sharpe, Ibis, 1904, p. 622; 1907, p. 445; Bates, Ibis, 1909, p. 30.

Alseonax epulatus fantisiensis Reichenow, V. A. ii. p. 456.

There is no doubt that there are among my birds two species of very small Flycatchers, alike in size, but differing in the colour of the plumage and very strikingly in the colour of the feet and bill. This last character is very noticeable in live birds, the one with the bright yellow bill and feet, contrasting with the slaty-blue plumage, being distinguishable from the other even when seen perched at a distance. A large series of specimens of both forms conclusively shews that the difference is not one of sex or age.

A careful reading of Cassin's original description makes it certain that the type of *Butalis epulatus* was a bird of the kind afterwards described as *A. fantisiensis*, that is, the kind with the dark feet and bill and the lighter grey back. The words of the original description are "plumage above cinereous" and "bill and feet dark." That Cassin afterwards received specimens of the other species, and supposed the difference to be due to age, appears by his remark in a later writing (Proc. Ac. Sc. Philad. 1859, p. 51). In the British Museum there are specimens of *both* species collected by Du Chaillu, all originally labelled "*Butalis epulatus* Cass." Dr. Sharpe seems to have been led to make the mistake by receiving later the dark-legged and light-backed species from

Fantee, and then following out the theory that every bird of Upper Guinea must have its nearly allied representative in Lower Guinea. As a matter of fact, these two species live side by side in Cameroon.

No. 3621, a female that had recently been sitting, was shot in April at its nest, which was brought with two nestlings. The nest was like that formerly described ('Ibis,' 1909, p. 30) and the nestlings had much tawny down.

ALSEONAX FLAVIPES, nom. nov. (Plate IX. fig. 18, egg.)

Alseonax epulata Sharpe, *Ibis*, 1904, p. 622; 1907, p. 445; Reichenow, *V. A.* ii. p. 455 (*nec* Cassin).

Muscicapa epulata Cassin, *Proc. Ac. Sc. Philad.* 1859, p. 51 (*nec* Cassin, 1855).

Like *A. epulatus* (Cassin), but darker, bluish-slate-coloured above; lower mandible, base of the upper mandible, and feet bright yellow.

No. 3942, a female with very marked brood-spot, was brought with the nest on which it had been shot with bow and arrow. This nest was a loose pile of fresh moss with a small cup-shaped cavity, 40 mm. in diameter, lined with *Usnea*. The two eggs (Nos. 372, 373) measure 17 × 13.5 mm.

[They are a nearly perfect oval in shape and entirely devoid of gloss. The ground-colour is dull greenish-white, indistinctly clouded and marked all over the shell with faint rufous and greyish mottlings. In No. 373 (the one figured), which is somewhat more brightly coloured, the rufous markings are much more numerous and concentrated towards the larger end.—O.-G.]

ALSEONAX OLIVASCENS.

Parisoma olivascens Cassin, *Proc. Ac. Sc. Philad.* 1859, p. 52.

No. 2640. ♂ (testes large). Akok, between Efulen and Kribi, July 1907.

No. 3018. ♀ breeding. Assobam, Dec. 1908.

No. 3319. ♂ immature. " " "

No. 9441. ♀ (egg in oviduct). Bitye, Oct. 1910.

All the specimens had the iris dark brown, the bill black

above, whitish horn-coloured beneath, the feet brown. The immature bird has pale yellowish-brown tips to the wing-coverts.

These birds, obtained at widely different places in Southern Cameroon, agree so perfectly with the description of Du Chaillu's bird collected more than fifty years ago that the suggestion of Dr. Sharpe that they were the same seems to me to be little short of certainty. I have been led to place the bird in *Alseonax* not only by its appearance, but by what I have been told by my hunter of the habits of one that was shot; the light-tipped wing-coverts go to strengthen this opinion.

PARISOMA PLUMBEUM.

Reich. V. A. iii. p. 521.

No. 3985. ♂ breeding. Biteye, Oct. 1909.

No. 4115. ♀ nearly ready to lay. Biteye, Feb. 1910.

Iris brown; bill black, grey beneath; feet grey.

The order of the birds in Reichenow's 'Vögel Afrikas' is only here departed from because of the manifest resemblance of *Parisoma* to the Flycatchers, rather than to the Tits.

PARISOMA HOLOSPODIUM.

Bates, Bull. B. O. C. xxv. p. 27.

Nos. 3138, ♀, Nov.; 3690, 3696, ♂, May; 4043, ♂, Nov.; 4221, ♂, June. All collected at Biteye.

PEDILORHYNCHUS COMITATUS. [Kula] (Plate IX. figs. 13 & 17, eggs.)

Pedilorhynchus camerunensis Sharpe, Ibis, 1904, p. 624; 1907, p. 447; Bates, Ibis, 1909, p. 30.

Alseonax comitatus Grant, Trans. Zool. Soc. xix. p. 392.

The fact that nestlings and immature birds of this species have no light spots on the wing-coverts or other parts of the plumage makes one suspect that its real affinities, in spite of appearances, are rather with *Trochocercus* and other genera than with *Alseonax*; hence I keep it in the separate genus made for it by Reichenow. The plumage of

young birds has already been noticed ('Ibis,' 1909, p. 31) and is further illustrated by two later examples (No. 3775, a young bird with plumage not quite grown, and No. 4410, which is still younger). Both of these had the inside of the mouth and the tongue orange without markings and the margin of the gape whitish. No. 4410 was one of two nestlings brought, in the nest, with the old male bird, No. 4409.

Five additional nests with eggs have been secured since those previously reported. All these were merely a slight additional lining placed inside old nests of Weaver-Finches, generally those of *Ploceus nigricollis*, but in one case that of *P. cucullatus*.

Five additional eggs vary in length from 19 to 21 mm., and in width from 13 to 13·5 mm.

[These examples closely resemble those already described, but in two specimens (Nos. 200, 201) the dense markings are reddish brown in tint.—O.-G.]

PEDILORHYNCHUS BREVIROSTRIS.

Bates, Bull. B. O. C. xxv. p. 28.

The type-specimen, the only one secured, was shot at Assobam; *P. comitatus* was not seen there.

CHLOROPETA BATESI. (Plate IX. fig. 15, egg, and text-fig. 14.)

Sharpe, Ibis, 1905, p. 468; 1907, p. 448.

A comparison of the specimens in the British Museum seems to shew that this species is really distinct, though all the forms of the genus are closely allied. *C. batesi* most nearly resembles *C. massaica*, but differs in having the darker colour of the crown not so well defined from the colour of the back, and in having the yellow loreal spot rather larger and more distinct. My later specimens agree with those sent previously. Moreover, these later specimens, in which the colour of the feet was noted, all had them grey, while specimens of *C. massaica* are marked "legs black." In my specimens the irides were brown; the bill above was dark horn-coloured, beneath yellowish-white with blue veins.

In this bird the number of the rectrices is *ten*. This

remarkable fact was ascertained by examining many freshly killed specimens, which can be more easily handled than dried ones. Moreover, two nestlings were examined, in which the tail-feathers shewed as a row of points across the pygostyle, and in each case there were just ten such points.

Text-fig. 14.

Tongue-spots of *Chloropeta batesi*.

The nestlings have the inside of the mouth and the tongue orange, and the tongue has a pair of black spots at the base—a character found in no other nestling Flycatcher (see text-figure 14). Adult birds retain much of the orange-colour inside the mouth, but there are no tongue-spots.

Four nests have been found and brought to me, in every case with the sitting bird. Three of these, one being a male, were caught on the nest after dark; the fourth, also a male, was shot on the nest with a bow and arrow, at dusk. These nests were found in *bikótók* or cultivated ground; two in forks of the big weed *Triumfetta*, the others on tangled bushes, one of which was thorny. They are bulky fabrics, though the cup-shaped cavity inside is small. The material is grass-blades and in one strips of maize-blades mixed with the "silk" of maize-ears; and all are lined with the finest grass-tops. Three nests contained two eggs each, the fourth two nestlings.

The eggs vary in length from 16·5 to 18 mm., and in breadth from 12 to 13·5 mm. No. 395, the specimen figured, measures 17 × 13·5 mm.

[They vary in shape from a wide oval to a rather narrow oval, and are slightly glossy. The ground is pinkish-white,

with very fine dots and minute spots of maroon-red and lilac-grey, most numerous towards the larger end. In two specimens (394 and 395) the larger end is washed with dull pink forming an indistinct cap.—O.-G.]

BIAS MUSICUS. [Kulityang.] (Plate IX. fig. 9, egg.)

Ibis, 1904, p. 626; 1905, p. 94; 1907, p. 450.

The Kulityang makes its nest in the smaller trees of old cleared ground about villages. It is a shallow cup composed of fine dry leaf-petioles and stems, without any soft lining; and is bound about with a netting of cobwebs, like the nests of other Flycatchers. The inside diameters, measured in different directions at the top, vary from 50 to 60 mm. Along with one nest were brought a *pair* of old birds, the female with a brood-spot, the male with large testes and in worn plumage. The boy who brought them said that he first shot one of the birds on the nest with his bow; then the other came and sat on the same nest, when he shot it also. There were two eggs, but only one (No. 496) was saved. It measures 21×16 mm.

[The egg is of a rather wide oval form, slightly pointed towards the smaller end and devoid of gloss. The ground is pale bluish-green, with a rather wide dense zone round the larger end formed of small spots and blotches of umber-brown and lilac-grey, and a few small scattered markings over the rest of the shell.—O.-G.]

SMITHORNIS CAMERUNENSIS. [Mbamezok.]

Sharpe, Ibis, 1907, p. 451; Bates, Ibis, 1909, p. 31.

Grant, Trans. Zool. Soc. xix. p. 400.

In reporting an additional nest and eggs, brought with a sitting female bird (No. 3090), it is only necessary to note that the materials of the nest were long stringy fibres, probably of dried bark of the weed *Triumfetta* or of dried plantain leaf-stalks—such things as are found in *bikótók* and not in the forest; that this nest contained three eggs, while previous ones had only two; and that these eggs were a little shorter than those obtained before, all three measuring 22×15.5 mm.

I believe now that the peculiar noise of the different species of *Smithornis* is made with the voice, as Mr. Swynnerton thought ('Ibis,' 1908, p. 92) and not with the wings. It is a call to attract the mate, and probably made by the male alone. It is made only while the bird is taking short circular flights, and at the same time displaying the white feathers of its back.

SMITHORNIS RUFOLATERALIS. [Mbamezok.]

Sharpe, Ibis, 1904, p. 627; 1907, p. 452.

No nest of the smaller forest Mbamezok has been recorded before. One (brought in with the sitting female bird, No. 4407) was like the nests of other species of the genus, and was made of materials obtained in the forest. The two fresh eggs (answering to the two empty sheaths found in the bird's ovary) were pure white with glossy and rather thin shells, and measure 23×15.5 and 22×16 mm.

SMITHORNIS SHARPIL. [Mbamezok.]

Alexander, Bull. B. O. C. 1903, p. 34; Grant, Trans. Zool. Soc. vol. xix. p. 402.

Smithornis zenkeri Bates, Ibis, 1905, p. 27; 1909, p. 31.

The date of the original description by Alexander was Jan. 1903 (not 1902); but still his name has the precedence over that given by Reichenow and published in March 1903.

Another nest and eggs have been found and brought to me with the bird still alive, caught at evening in the nest. The fabric was made of fine black fibres and dried leaves, such as would be obtained in the forest, not on cleared land. The two pure white eggs measure respectively 24.5×17 and 22×16.5 mm.

HYLIOTA VIOLACEA.

Sharpe, Ibis, 1904, p. 625.

Nos. 1762, ♀; 1763, ♀ young. Bitye, June 1906.

No. 2169, ♂. Bitye, Jan. 1907.

The male is exactly like the bird obtained at Efulen in 1902. The adult female has the upper parts like the male, though with less lustre, and the white spots on the wing-

coverts are not so large, none of the coverts being entirely white; the throat, breast, and abdomen are pale yellowish-brown (these parts are nearly white in the male). The young bird is dull black, without any white on the wing-coverts, and beneath nearly white.

Nos. 1762 and 1763 were shot by myself in the same tree, where they were busily flitting about among the twigs looking for insects, more in the manner of a Warbler than of a Flycatcher.

PLATYSTIRA CYANEA. [Njibesole.]

Sharpe, Ibis, 1904, p. 626; 1907, p. 449.

I have now heard this bird making noises very similar to those of *Diaphorophyia castanea* as already described ('Ibis,' 1905, p. 94); that is, a flipping noise, made with its wings during short flights, and a snapping noise made with its bill while at rest on a perch. Two or three rapid snaps with the bill were made at a time, the mouth being opened wide in making them. This was done by a male, and was evidently done to attract the attention of the female.

DIAPHOROPHYIA TONSA.

Bates, Bull. B. O. C. xxvii. p. 86.

No. 4039. ♀, breeding (type of the species). Bitye, Nov. 1909.

No. 3275. ♀ imm. Assobam, Dec. 1908.

? No. 2970. ♂ ad. Bitye, March 1908.

DIAPHOROPHYIA CHALYBEA. (Plate IX. fig. 22, egg.)

Reich. V. A. ii. p. 492.

D. chlorophrys Sharpe, Ibis, 1905, p. 469; 1907, p. 449.

Females differ from males only in having less metallic lustre.

No. 2954, ♂, was shot with bow and arrow, and brought to me with its nest and two nestlings, Nos. 2955 and *a*. The nest, like that of *Tchitrea*, is a little circular cup of fibres bound about with cobwebs, but is not so compact and neat as the Abelebele's nest. It measures 40 or 45 mm. in diameter at the inside of the rim.

The young birds, which are partly feathered, have no chestnut whatever in their plumage, but bear some resemblance to the adults. The throat and chest, however, are white, as well as the rest of the under side, and above they are of a dull greyish-black.

Another nest like the one described above was brought in with a sitting female (No. 3083) caught on the nest. The bird when held with a string tied to its foot made a snapping noise with its bill. Two eggs that were in the nest measure 18×12 and 17.5×12.5 mm.

[They are of a rather long oval shape and somewhat glossy. The ground-colour is dull greenish-white, with a heavily blotched and spotted zone of umber-brown and dark grey round the larger end and with a few small scattered markings over the rest of the shell.—O.-G.]

ERYTHROCERCUS MACCALLI.

Sharpe, Ibis, 1904, p. 628 ; 1907, p. 453.

This tiny forest bird does not feed singly, as other Flycatchers do, but in little flocks, sometimes by themselves, sometimes in company with birds of other kinds in an *éjak*. They continually make an excited twittering in a fine insect-like tone of voice, which sometimes reminded me of a brood of very young chickens. They are never still for a second, but when on a twig continually turn themselves and spread their tails in the manner of *Elminia longicauda*. They search for insects among the foliage, and only once have I noticed them pursuing their prey in the air.

This species was abundant about my camp at Assobam.

The departure from the usual custom of Flycatchers extends also to the nidification of this species, judging from a nest that was brought by my boy with two nestlings in it, and a breeding male *Erythrocercus maccallii*, which he had shot "at the nest." This nest looked almost like that of a *Cisticola*, being suspended from two small twigs and some of their leaves, to which it was fastened with cobwebs stuck on (not sewn as the nests of *Cisticola* and *Prinia*); it was composed of dry leaves with a little down inside,

and was deep, and built high on the more exposed or open side.

The extremely small nestlings had the mouths inside and the tongues bright orange, unmarked, and the margin of the gape yellowish white.

ELMINIA LONGICAUDA. (Plate IX. fig. 20, egg.)

Sharpe, *Ibis*, 1904, p. 631; 1907, p. 456; Bates, 1905, p. 470.

The habits of this bird were described in 'The Ibis' (1905, p. 96), with its nest (1905, p. 457) and its eggs (1909, p. 32). One of those eggs, No. 41, is figured here. Other nests and eggs have been found, but the eggs were broken. A nest, brought in with the male bird, No. 3023, contained a single very young nestling. The inference from the fact that the first breeding birds and nests were found in June, namely, that this species has a distinct breeding-season, has proved partially correct, as the eggs and young found since have been in the months of March, April, and August, that is, all within a single half-year.

As this is a bird of the cleared land, averse to the forest, it is naturally most abundant about the Ja and Bitye; it was rare at Efulen, and not seen at all at Assobam, where the extent of the cleared land is small.

TROCHOCERCUS NIGRO-MITRATUS.

Reich. V. A. ii. p. 500.

Trochocercus nitens (nec Cass.), Sharpe, *Ibis*, 1904, p. 629; 1907, p. 453.

No. 84. ♀. Bitye, R. Ja, 1903.

Nos. 163, 408, 837, 1012. All ♂. Efulen.

Nos. 789, 1007. Both ♀. Efulen.

No. 1083. ♀. Zima Country.

Nos. 2561 & 2622, both ♂, and 2623, ♀. Between Kribi and Efulen.

No. 4266. ♀ ad. Bitye, July 1910.

Nos. 4454 & 4494. ♂ ad. Bitye, Nov. 1910.

Nos. 3926 ♀, 4222 ♂, & 4495 ♀, all immature. Bitye, 1910.

No. 4267. Fledgling. Bitye.

All these specimens are mentioned, because Dr. Sharpe had placed those collected previously to the writing of his papers under *T. nitens*. Others given in his papers under *T. nitens* are not now in the British Museum. This species is the darker-coloured and bluer one, with but little crest and a shorter tail. There is no difference between the sexes as regards plumage; females are slightly smaller than males. Immature birds may be known from the plumage only by the fact that the black of the crown is not so deep, and even the very young bird mentioned above is of the same general colour as the adults, though the head is only dull slaty black, and the back dull dark grey, not bluish.

This species and *T. nitens* are very distinct, and are distinguished by Dr. Sharpe. But in some unaccountable way he got the names transposed; and his remarks shew a confusion apparently caused by a subsequent effort to reconcile the specimens with the wrong descriptions.

The iris and the feet in *T. nigro-mitratus* are coloured as in *T. nitens*, but the bill is entirely black.

The young bird (No. 4267) had the inside of the mouth and tongue bright orange, unmarked, and the margin of the gape pale yellow. It was shot with bow and arrow along with No. 4266.

TROCHOCERCUS NITENS.

Cassin, Proc. Ac. Sc. Philad. 1859, p. 50; Reich. V. A. ii. p. 500.

Trochocercus nigromitratus (nec Reich.), Sharpe, Ibis, 1904, p. 629.

No. 898, and one of 12 Dec., 1902. Both ♂ adult. Efulen.

No. 407. ♀ adult. Efulen.

Nos. 114 & 1062. Both ♂ immature. Efulen.

No. 3278. ♀ adult. Assobam, Bumba R. Dec. 1908.

No. 3299. ♂ " " " " "

No. 3172. ♂, changing by moult from immature to adult plumage. Assobam, Dec. 1908.

No. 4137. ♂ adult. Bitye, March 1910.

Nos. 4244 and 4260. Both ♂ immature. Bitye, June and July 1910.

I have given a full list of the specimens in this collection, and added to them the specimens from my former collections that I find in the British Museum, because Dr. Sharpe has strangely confused this species with *T. nigro-mitratus*. Adult males have a shining blue-black plumage on the head, back, throat, and chest; adult females have this colour on the head only; immature birds have only the head black, and of a duller black than the adult females.

The iris in all is very dark brown, almost black; the bill and feet are blue, but the former has a black tip.

The immature birds have the rectrices a little longer and much more pointed than those of adults.

TCHITREA VIRIDIS. [Abebebe.]

Sharpe, Ibis, 1904, p. 630; 1905, p. 470; 1907, p. 454; Bates, Ibis, 1905, p. 95; 1909, p. 32; Reich. V. A. ii. p. 504.

Terpsiphone duchailloi Grant, Trans. Zool. Soc. xix. p. 404.

Tchitrea melanura Reich. V. A. ii. p. 503.

Tchitrea speciosa Reich. V. A. ii. p. 724.

I have brought home a large series of male birds with long tail-plumes, which, in spite of the astonishing variation in plumage, I believe to belong to the same species.

Two male specimens in the British Museum, one from the Gambia, and the other from Casamance, with chestnut tails and under tail-coverts, might be taken to represent one species, while those of Cameroon and Gaboon form another; but my No. 3277 is an exact counterpart of the Gambia examples. I have also specimens in which all the parts that are chestnut in the cases just referred to are white, and it seems to be true that wherever white appears in the plumage it has been preceded by chestnut.

Still more remarkable are the birds with the middle rectrices black. No. 4013 has these perfectly black; one (No. 4512) has some white near the shaft, as in Reichenow's *T. melanura*; but another bird (No. 4481) has the middle tail-feathers black and white, with the white predominating. No. 4013 has the lateral rectrices black; other specimens have them chestnut and black mixed. It is impossible to separate my birds into different species. Besides, they seem all to live together in the *bikótók*, while the other two species of the genus in my district are birds of the forest.

There can be no question of hybrids among these variously coloured birds, for no two species have yet been found which could produce such hybrids. We seem to have to deal with a wild species varying as remarkably in coloration as do many domestic species.

Birds of this species have the bill and feet blue, the bill having a black tip; the inside of the mouth is greenish yellow, brightest in adults.

The long middle rectrices of the male become extremely worn. When they are shed, they are soon replaced by a new pair, so that adult males are seldom seen without them.

These birds are nearly always breeding, and nests and eggs have now been found and recorded in every month of the year except one, and in that month birds in breeding condition have been shot. The nests are often in exposed places and many eggs and young are probably destroyed. The male bird, in spite of his conspicuous plumage, takes a share in the work of incubation. Once I saw a female fly off a nest at my approach, and on returning about fifteen minutes after I discovered the male on the nest. Various observations lead me to think that the male sits during the hours of broad daylight, and the female at evening, night, and morning; but that the parent not on duty is generally close at hand to take the place of its mate, if frightened off.

Of many eggs now obtained, none vary much from those already described, though the limits of size given before will have to be extended, the extremes in length being 20 and 17 mm., and in width 15 and 12.5 mm.

TCHITREA RUFO-CINEREA. [Abelebele.] (Plate IX. figs. 19 & 21, eggs.)

Sharpe, Ibis, 1904, p. 631; 1907, p. 456; Bates, Ibis, 1909, p. 33.

This species is of a more retiring disposition than *T. viridis*, and keeps to the forest, but seems otherwise to resemble it in its habits. It has nearly the same calls and song, but in a more subdued tone, and has also been heard making an unusual chattering noise, something like that of a small squirrel.

The colouring of the bill, eyelids, the inside of the mouth, and feet in this species is the same as in *T. viridis* and in *T. tricolor*. The iris in all three is very dark brown or black.

Another male of *T. rufo-cinerea* was shot with bow and arrow, while sitting on the nest in the daytime, and another male was shot just after leaving the nest. A sitting female was caught on the nest at dusk in the evening. The six eggs from these three nests agree in measurements with the larger of the eggs of *T. viridis*, none varying more than half a millimetre from 19 × 14 mm.

[In addition to those already described ('Ibis,' 1909, p. 33) the present collection contains eggs more profusely spotted and marked with *light red* and lilac-grey. These are almost inseparable from eggs of *T. viridis*.—O.-G.]

TCHITREA PLUMBEICEPS.

Reich, V. A. ii. p. 510.

No. 1890. ♂ (testes small). Bitye, R. Ja, Aug. 1906.

No. 3967. ♂ (testes rather small). Bitye, R. Ja, Oct. 1909.

These specimens, the first of which was recorded by Dr. Sharpe under *T. rufo-cinerea* ('Ibis,' 1907, p. 456), seem to be the first found farther north in West Africa than Manjanga on the Congo or (doubtfully) Landana. In neither do the middle rectrices appear to be fully grown, though in one they are already over a foot long. The colour of the bill, the ring around the eye, and the feet in No. 3967 are of a paler blue than in any of the three other species



H. Grönvold del. et lith.

LOBOTUS ORIOLINUS, ♂. ♀.

West, Newman imp.

(see above, under *T. rufo-cinerea*), and there was a distinct wattle below the eye, not seen in the others.

CAMPOPHAGA QUISCALINA.

Sharpe, Ibis, 1904, p. 632 ; 1907, p. 457.

Nos. 3834, 3835. ♂ ♀ ad. Bitye, Aug. 1909.

Both these adult birds had the inside of the mouth bright orange, the iris dark brown, the bill and feet black, though the feet of the female were rather of a dark slaty horn-colour. It is remarkable that the female is somewhat larger than the male, with a longer bill ; the difference in size appeared even in the bodies after skinning.

A specimen of a young *Campophaga* (No. 3375, ♂, Efayong, R. Ja, Jan. 1909) has barred plumage like the young and females of *C. nigra*, and can scarcely belong to the same species as the adult specimens.

LOBOTUS ORIOLINUS. (Plate VIII.)

Lobotus oriolinus Bates, Bull. B. O. C. vol. xxv. p. 14.

No. 3181, ♂ ; 3202, ♀. (Types of the species.) Assobam, South-Eastern Cameroon, Dec. 1908.

No. 3154, ♀ ; 3153, ♂. Assobam, South-Eastern Cameroon, Dec. 1908.

No. 3142. ♂. Efayong, R. Ja (halfway between Bitye and Assobam), Nov. 1908.

These specimens were shot on my trip to the eastern side of the colony, November 1908 to January 1909. All were adult birds with more or less enlarged breeding-organs, and some were moulting. The food found in their stomachs was generally caterpillars, but sometimes grasshoppers or other insects. They were inactive birds, and never seen in flight, but always perched, silent and solitary, among the leaves of small trees. Their resemblance in colour to *Oriolus latior* is such that neither my boys nor I, if we could not see the bill, could distinguish them when seen in a tree.

SIGMODUS RUFIVENTRIS.

Sharpe, Ibis, 1908, p. 328 ; Bates, Ibis, 1909, p. 33.

Nos. 3719 and 3731 were immature ; they differ from

adults in the plumage of the throat and chest, and in the colour of the bill. The bill is black or red mixed with black, while in the adult it is entirely red; the black throat-plumage is mixed with a yellowish-brown colour like that of the belly, and there is a tinge of the same colour on the white chest.

It was a mistake when I spoke of the "yellow iris" of birds of this species. The conspicuous yellow colour is not that of the iris, but of the ball of the eye, outside the iris; the latter is dark brown.

A small flock of these birds was observed day after day near my camp at Assobam. They were always seen near the same place moving from tree to tree in a sluggish way, one at a time, and then sitting for a long time motionless. One of the sounds made by them resembled the "swishing" of a switch; this was made with the mouth while the birds were sitting still. They also make a snapping noise with the bill. A specimen that was brought to me alive, having been merely knocked down by the little arrow, made this loud snapping noise.

POMATORHYNCHUS FRATER.

Sharpe, *Ibis*, 1908, p. 335; Bates, *Ibis*, 1909, p. 33.

Two young birds, one half-fledged and still in the nest, and one which had just left the nest, had the plumage much like that of the adult. In each the tongue and the inside of the mouth were bright orange, while the swollen margin of the gape was white.

The majority of the nests with eggs have been found in the month of August, but nests with eggs or nestlings have also been obtained in September and October, as well as in March. The principal rainy season begins at the end of August, and it is probable that insects are most abundant at that season.

The number of eggs in a nest was always two. Seven eggs not included in the former description vary in length from 25.5 to 22 mm, and in width from 18 to 16.5 mm.

[These eggs much resemble those already described, and are quite of the same type as those figured in the 'Catalogue

of Birds' Eggs in the British Museum,' vol. iv. pls. xii. & xiii.—O.-G.]

CHLOROPHONEUS BOCAGII.

Dryoscopus bocagei Sharpe, Ibis, 1908, p. 331; Bates, Ibis, 1909, p. 35.

A young bird (No. 3881) has the whole upper surface finely barred, the wing-coverts tipped with light yellowish-brown, and the under surface—the ground-colour of which is yellowish-white—finely barred with dark colour. A still younger bird (No. 4263) is similarly marked, but is without the yellowish tinge beneath. A nearly adult bird (No. 4058, ♀) has still a few light tips on the wing-coverts. The young birds have the tongue and inside of the mouth orange, the tongue being dark or black at the base, but not in defined spots.

CHLOROPHONEUS REICHENOWI.

Cosmophoneus reichenowi Neumann, J. f. O. 1899, p. 393
Nos. 1525, 2162, 2190, 4124. Adult ♂. Bitye, R. Ja.
No. 3373. Adult ♂. Efayoug, R. Ja.
No. 1463. ♀. Bitye, R. Ja.

CHLOROPHONEUS BATESI.

Sharpe, Ibis, 1908, p. 330.
Nos. 3607, 3627 (♀'s); 3612, 3626, 3781, 3786, 3791,
4146, 4176, 4237 (♂'s). All killed at Bitye, River Ja.
No. 3374. Young ♀. Efayoug, R. Ja.

The evidence of these specimens confirms Dr. Sharpe's opinion that this is a species distinct from *C. multicolor*. Some of the male specimens have, indeed, more or less green instead of black in the tail, and in this respect approach *C. multicolor*; but such birds seem, from other considerations, to be hardly adult. All specimens of *C. multicolor* have green tails. Females of *C. batesi* have about as much of the under surface scarlet as males of *C. multicolor*, while the females of the latter have no scarlet. There seems to be an evolution going on in both these species towards more black and scarlet in the plumage,

the males leading; this evolution has gone a step further in both sexes in *C. batesi* than in the other species.

A young specimen has all the wing-coverts tipped with yellow, traces of yellow bars on the back, and of dark bars on the breast.

In the adult males the irides are dark blue; in younger birds and females this colour is more or less mixed with grey; the feet of all are bluish-grey.

The birds of this species that have been shot, in one case by myself, were met with in *bijak* along with other birds, in the second-growth woods of old cleared ground (*bikôtók*).

LANIARIUS LUEHDERI. [Nko'o-bikôtók.] (Plate IX. figs. 1-4, eggs.)

Sharpe, *Ibis*, 1908, p. 330.

No. 3063 is a young bird with the plumage not fully grown. It represents a still younger plumage than that of which the description is given in Reichenow's 'Vögel Afrikas.' All the upper side is finely barred with light brown and blackish; the under side is olive-yellow with fine dark bars, which are wanting on the crissum and buff under tail-coverts.

I have already spoken ('*Ibis*,' *l. c.*) of the commonness of this bird in the impenetrable thickets of old cleared ground (*bikôtók*) and of its calls in which mates answer each other, nearly always while out of sight. The call of the female is probably the low "churring" one, while the one I think to be that of the male might almost be described as a "cooing" note. Once a bird of this species that was making these "cooing" calls was seen to bend its head and neck forward at each utterance.

Several nests of Nko'o-bikôtók have now been found. They are shallow cups set in the forks of low trees or bushes or in the big half-shrubby weed *Triumfetta*. These nests are composed of dried weed-stems with fine rootlets inside, the rootlets seeming to be an invariable feature. They are shallower and ruder in construction than the somewhat similar nests of the *Pycnonotidæ*.

Nests with eggs or young were found in the months of August, September, and October.

Nine eggs have been collected. The smallest of these, No. 287 (fig. 2 in the Plate), measures 22×16 mm.; No. 289 (fig. 1) measures 27×18 mm.; another is 26.5 mm. long. These measurements give the extremes.

[Eggs of this species vary in shape from a long rather pointed oval to a wide regular oval; they have little or no gloss. The ground-colour is pale blue, pale greenish-blue, or in one instance creamy-buff. In some examples the markings are more or less regularly distributed all over the shell, in others they are mostly confined to the larger end, where they form a dense cap or broad zone. The surface-markings are reddish-brown or yellow-umber and the shell-markings are bluish-grey or lavender-grey.—O.-G.]

DRYOSOPUS SENEGALENSIS. [Sesô.]

Sharpe, Ibis, 1908, p. 332; Reich. V. A. ii. p. 592.

Dryoscopus tricolor Sharpe, Ibis, 1908, p. 333.

Nos. 4398, 4484, 4528. All ♂ adult. Biteye, R. Ja.

No. 4776. ♀. Biteye, R. Ja.

No. 3030. ♂ nestling. Biteye, R. Ja.

The varying shades of black, grey, and white on the backs of females of this species has caused much perplexity. Sharpe recognised (doubtfully) two species among my birds, and Neumann thought there were two species found in Cameroon, in which the males were alike, only the females differing. My large series of specimens, including those listed above, together with those in the British Museum from former collections, contains many adult males, but all with glossy black backs and wings and pure white rumps; while the females differ in all degrees, from those with grey backs and wings and light grey rumps, to one almost like the male on the back and rump. It is not unreasonable to suppose the last was an old female, and that as females advance in age they become more like the males in plumage.

The nestling is coloured much like the older birds, and shews no sign of barred feathers or of light tips on the wing-coverts.

DRYOSOPUS GAMBENSIS.

No. 4368. ♂, breeding. Bitye, Aug. 1910.

No. 4403. ♂, breeding. Bitye, Sept. 1910.

MALACONOTUS GABONENSIS. [Ekôlat.] (Plate IX. fig. 6, egg.)

Sharpe, Ibis, 1908, p. 329.

No. 4151 shews clearly the change from the immature to the adult plumage, for among the pale feathers of the abdomen new ones of a deeper colour are growing. No. 3851, which is a much younger bird, with the plumage not fully grown, has the feathers of the head pale grey with buff tips, the throat, chest, and upper breast greyish-white, the lower breast, abdomen, and under tail-coverts pale yellow; the bill dark horn-coloured. Adult males have the breast somewhat redder than the females. Adults have the iris greyish-white; the bill black; the feet pale bluish-grey.

No. 3871, a breeding male, was shot near its nest, which was also brought to me with three eggs in it. This nest was shallow and loosely built of dry vines and small twigs and leaf-petioles, with the top and inside part of black rootlets. It was said to have been found on some leaning or crossing cane-like stems in *ékôtók*. The eggs measure 28 to 28·5 mm. in length, and 20·5 mm. in width. No. 281 is figured.

[The eggs are of a regular oval shape or slightly pointed towards the smaller end, and they are very slightly glossed. The ground-colour varies from pale pink to pinkish-white.

The markings, which consist of spots and small blotches of rich maroon and pale purple, though scattered all over the shell, are chiefly concentrated in a wide irregular zone round the larger end.—O.-G.]

LANIUS MACKINNONI. [Asese.] (Plate IX. figs. 5 & 8, eggs.)

Sharpe, Ibis, 1908, p. 328; Bates, Ibis, 1909, p. 36.

Several young birds, fledglings or with the plumage hardly grown, have the characteristic finely-barred feathers of young Shrikes. Three of these that were females have no

trace of the chestnut patch on the flanks that marks adult females.

A male of this species (No. 3868), which had been shot just as it left the nest, was brought to me. The nest contained two eggs, and are similar to a nest and eggs brought to me a few years ago which were thought to belong to this Shrike. The nest of No. 3868 was securely placed among a number of twigs; it was bulky, made of fine fibres, grass or weed-stalks, tendrils, and maize "silk."

The eggs measure 23.5×17.5 and 23×18 mm.

[Eggs of Mackinnon's Shrike are of a regular oval form, devoid of gloss, and have the ground-colour pale creamy white, finely spotted and speckled all over with pale yellowish-brown and lilac-grey, the markings, which are everywhere rather faint, being most numerous towards the larger end and in some specimens forming a regular wreath.—O.-G.]

DICRURUS SHARPII. [T'a-Beti].

Sharpe, Ibis, 1908, p. 355; Bates, 1909, p. 37.

No. 3774, a female with signs of recent incubation, was shot by myself near its nest, where it had been feeding its young. The nest was on a thin horizontal branch of a little tree, only ten feet from the ground, in an old *ékotok*. When the parent birds found me near their nest, one of them scolded me vociferously, alternating its scolding noise with its clear song-notes; it thus attracted quite a crowd of little Sunbirds and other species, including a Touraco, to the place. The nestlings were perfectly naked, with yellowish skins. They had the tongue and inside of the mouth deep yellow, without markings. The yellow colour persists at the base of the tongue in fully adult birds, after the rest of the tongue has become black like the bill.

The nest above mentioned was just like that already described (Ibis, 1909, p. 37), and suspended in the same manner between two twigs. The principal material consisted of *Usnea* stems, and probably the same material was used in the construction of the other nest, though I described it as "fine rootlets."

BUPHAGA AERICANA. [Saé-nyat.]

Reich. V. A. ii. p. 666.

No. 4209. ♂. Bitye, June 1910. The tongue, which is thick and fleshy, and the inside of the mouth are red. The stomach contained several ticks, mostly cut in two, and a large fly. The edges of the bill, or *tonia*, are very sharp.

Nkolo, who shot the bird, one of a pair sitting on a dead tree, saw no sign of large animals near. I had long heard of the Saé-nyat (a Bulu name which is almost equivalent to "Ox-pecker," "nyat" meaning Buffalo), but I never obtained an example before.

ONYCHOGNATHUS HARTLAUBI.

Reich. V. A. ii. p. 702.

No. 3137. ♀ (showing signs of incubation). Bitye, Oct. 1908. The stomach contained some dry seeds.

Though this species is rare, the condition of the specimen mentioned shews that it breeds about Bitye. It was the only one obtained, but others were seen in tall trees near my house and several times shot at but not killed.

LAMPROCOLIUS SPLENDIDUS. [Kwang.] (Plate IX. figs. 7, 11, eggs.)

Grant, Trans. Zool. Soc. xix. p. 264.

Lamprocolius glaucovirens Sharpe, Ibis, 1908, p. 357.

Lamprocolius splendidus glaucovirens Bates, Ibis, 1909, p. 37.

A young bird just able to fly is noted as having the metallic colours of the plumage nearly as bright as in the adult. No. 4418, somewhat younger, was taken from a knot-hole in a dead tree; it had the inside of the mouth flesh-coloured tinged with yellow, and the tongue dark, becoming black at the base. Two younger nestlings, also taken from a knot-hole in a tree, had the mouth inside of a yellowish flesh-colour. All had a conspicuous white mouth-flange or gape-margin. All these young birds and two clutches of eggs were found in the months of August, September, and October.

No. 4438, a female with a very marked brood-spot, was shot by Nkolo just after it had flown out of its hole in a tree.

He also brought the nest, a mere cushion of dry leaf-petioles, said to have been found at the bottom of the hollow in the tree, and three eggs. These eggs contained large embryos, and only one could be saved; it is No. 595, fig. 7 on the Plate. All three eggs were measured, and found to be 30, 29.5, and 29 mm. long respectively, and to have equal width, 21.5 mm. Thus they were much smaller than the eggs described before ('Ibis,' 1909, p. 38), but otherwise resembled them. Fig. 11 in the Plate is taken from No. 110, collected previously.

MALIMBUS NITENS. [Nga'a-minkan.] (Plate IX. fig. 11, egg.)

Sharpe, *Ibis*, 1908, p. 352; Bates, *Ibis*, 1909, p. 39.

In my previous notes I described nests of this species found in the Efulen district on overhanging branches of trees over the streams. In the Ja River district small streams are usually bordered by swampy ground thickly covered with the *Raphia* palm, and nests of *Malimbus nitens* are found hanging to the tips of its fronds. Here the material is not rootlets and the like, but shreds torn from the palm-leaves.

One such nest contained two nestlings nearly fledged, Nos. 4238 and 4239. These have red on the crops as in the adult, and one has also a few red feathers on the crown, though the adult has no red on that part. A still younger nestling, No. 3706, is almost entirely black, but shews a little dull red colour on the chest.

Another nest, in which the sitting female was caught, contained two eggs (Nos. 639 and 640). These are like those briefly described in a former note (*Ibis*, 1908, p. 352); both measure 24 x 16 mm.

[The eggs are of a long oval form and almost devoid of gloss. They have a yellowish stone ground-colour, with minute dots and spots, and large blotches of vandyke-brown and greyish-lilac.—O.-G.]

MALIMBUS CORONATUS. [Nga'a-minkan.]

Sharpe, *Ibis*, 1908, p. 352; Bates, *Ibis*, 1909, p. 41.

Nos. 3007, 3575, 3938, 3953, 4040, 4205, 4242. All ♂ adult.

Nos. 3005, 3008, 3055, 3558, 3939, 4258. ♀ adult.

Nos. 3576, 3600. ♀ young.

No. 4257. ♂ young.

All collected at Bitye.

In my former paper I gave evidence for believing that this species has a perfectly black female (of course, the words in that paper, at the top of p. 41, "in both sexes" should be struck out). I have now further evidence of this fact. All the six black female birds enumerated above were shot in company with birds that looked like males of this species. No. 4258 was killed by the same shot as No. 4257, a young male *M. coronatus*, and Nkole, who shot them, thought the perfectly black bird was feeding that with the red crown.

An interesting fact has been discovered about the immature plumage in this species; that is, that young females *have red crowns like adult males*, but not of so bright a colour. I ascertained the sex of the birds myself (as I always do) and have no doubt that both No. 3576 and No. 3600 were females. The former (the younger of the two) has all the feathers of the crown and forehead dull red; the latter has only a few red feathers on the crown, and is nearly adult. The young male looks much like the young female, but has black feathers among the red.

MALIMBUS CASSINI. [Nga'a-minkan.]

Sharpe, Ibis, 1908, p. 352; Bates, Ibis, 1909, p. 39.

Nos. 3288 ♂ & 3298 ♀. Assobam.

Nos. 4276 ♂ adult; 3799 ♀ & 4538 ♂ immature. All Bitye.

The perfectly black female No. 3298 was shot in the same place and among the same company of birds,—in the trees over my camp at Assobam—as No. 3288, which is *M. cassini*; this fact, and the fact that no male *M. coronatus* was shot at Assobam, is the only reason for considering it the female of the present species; for it is exactly like females of *M. coronatus*. It will be remembered that at Efulen I shot a perfectly black female at the same nest with a male *M. cassini*.

EXPLANATION OF PLATE IX.

Figures of the Eggs of West African Birds.

[The numbers in brackets are those of the eggs, as marked on the egg-shell.]

- Fig. 1. *Laniarius luehderi*, p. 538. (No. 289.)
Fig. 2. " " " (No. 287.)
Fig. 3. " " " (No. 549.)
Fig. 4. " " " (No. 568.)
Fig. 5. *Lanius mackinnoni*, p. 540. (No number.) Cf. Fig. 8.
Fig. 6. *Malaconotus gabonensis*, p. 540. (No. 281.)
Fig. 7. *Lamprocolius splendidus*, p. 542. (No. 595.) Cf. Fig. 11.
Fig. 8. *Lanius mackinnoni*, p. 540. (No number.)
Fig. 9. *Bias musicus*, p. 526. (No. 496.)
Fig. 10. *Caprimulgus batesi*, p. 515. (No. 172.)
Fig. 11. *Lamprocolius splendidus*, p. 542. (No. 110.)
Fig. 12. *Fraseria ocreata*, p. 520. (No. 187.)
Fig. 13. *Pedilorchynchus comitatus*, p. 523. (No. 200.) Cf. Fig. 17.
Fig. 14. *Malimbus nitens*, p. 543. (No. 639.)
Fig. 15. *Chloropeta batesi*, p. 524. (No. 395.)
Fig. 16. *Ploceus amaurocephalus*, p. 545. (No. 337.)
Fig. 17. *Pedilorchynchus comitatus*, p. 523. ("d")
Fig. 18. *Alseonax flavipes*, p. 522. (No. 373.)
Fig. 19. *Tchitrea rufo-cinerea*, p. 534. (No. 381.) Cf. Fig. 21.
Fig. 20. *Elminia longicauda*, p. 530. (No. 41.)
Fig. 21. *Tchitrea rufo-cinerea*, p. 534. (No. 228.)
Fig. 22. *Diaphorophya chalybea*, p. 528. (No number.)



H. Grönvold, pinx.

C. Hodges & Son lith.

FIGURES OF EGGS OF WEST AFRICAN BIRDS.

No. 4538, a young male with light bill, has the parts of the plumage that are red in the adult, red and black mixed. No. 3799, a female not quite adult (bill black), has a few red feathers on the throat and chest. It looks as if this young female had had a plumage like that of the young male, but was becoming quite black like the adult females.

MALIMBUS RUBRICOLLIS. [Nga'a-minkan.]

Sharpe, Ibis, 1908, p. 351.

Nos. 4028 & 4339.

Young birds, both certainly females, shot at Bitye, have red on the head, though of a duller hue than in adults; and this red colour *includes the forehead, as in adult males*. In adult females the forehead is black.

PLOCEUS AMAUROCEPHALUS. [Nga'a-minkan.] (Plate IX. fig. 16, egg.)

Sycobrotus amaurocephalus Cab. J. f. O. 1880, p. 349.

Sycobrotus bicolor Sharpe, Ibis, 1908, p. 349.

Ploceus bicolor Bates, Ibis, 1909, p. 42.

No. 3372, young, has the head not so black and the back not so grey as adults.

Another nest of this Weaver brought to me was like those already described. Nests of this species differ from those of *P. cucullatus*, *P. nigerrimus*, and *P. nigricollis* in being rougher, and composed of stems and tendrils; while they have not such a long entrance-tube as those of the different species of *Malimbus*.

With the nest mentioned was brought the sitting female bird, which had been pierced by an arrow while in the nest. There were three eggs (Nos. 337-339), measuring respectively 22.5×16 , 22×16.5 , and 22×15.5 mm.

[Eggs of a regular oval form, slightly glossy. Ground-colour pale bluish-white, rather sparingly spotted and blotched over the entire shell with various shades of pale brown and lilac-grey.—O.-G.]

[To be continued.]